NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

PLANNING FOR SUCCESS: CONSTRUCTING A FIRST RESPONDER PLANNING METHODOLOGY FOR HOMELAND SECURITY

by

Thaddeus K. Jankowski Sr.

March 2005

Thesis Advisor: Paul Stockton
Second Reader: Glen Woodbury

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY ***(Leave blank)***	**2. REPORT DATE** March 2005	**3. REPORT TYPE AND DATES COVERED** Master's Thesis	
4. TITLE AND SUBTITLE: Planning for Success: Constructing a First Responder Planning Methodology for Homeland Security			**5. FUNDING NUMBERS**
6. AUTHOR(S) Thaddeus K. Jankowski Sr.			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			**8. PERFORMING ORGANIZATION REPORT NUMBER**
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			**10. SPONSORING/MONITORING AGENCY REPORT NUMBER**
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unclassified.			**12b. DISTRIBUTION CODE**

13. ABSTRACT (maximum 200 words)

The planning methodologies used today by most U.S. fire departments are excellent for traditional missions, but wholly inadequate for the threats posed by terrorism. Planning in the fire service and the rest of the first responder community historically has relied on a one-dimensional approach that uses a scenario-based planning (SBP) methodology. This thesis argues that the fire service and others in the first responder community will be able to contribute to homeland security missions much more effectively, and efficiently, by switching to specially adapted versions of capabilities-based planning.

This thesis proposes a new integrated planning methodology that combines the planning strengths of scenario-based planning, threat-based planning, and capabilities-based planning. The new method identifies capabilities that could be used to manage and mitigate the consequences of the different types of contingencies within the various response spectrums. It allows an organization to perform analysis and efficiency studies to evaluate the different spectrums of contingencies against existing capabilities and create a menu of capabilities necessary for the first responder to respond to all its missions, including immediate threats and terrorism, in the most efficient and cost-effective manner.

14. SUBJECT TERMS Fire Service, First Responder Community, Planning Methodology, Scenario-based Planning (SBP), Threat-based Planning (TBP), Capabilities-based Planning (CBP), Traditional Response, Immediate Threats, Homeland Security Missions, Contingency Spectrums, Full Spectrum Emergency Response Preparedness (FSERP).	**15. NUMBER OF PAGES:** 103
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	**18. SECURITY CLASSIFICATION OF THIS PAGE**	**19. SECURITY CLASSIFICATION OF ABSTRACT**	**20. LIMITATION OF ABSTRACT**
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500 Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

PLANNING FOR SUCCESS
CONSTRUCTING A FIRST RESPONDER PLANNING METHODOLOGY FOR HOMELAND SECURITY

Thaddeus K. Jankowski Sr.
Battalion Chief, Fire Department City of New York
Executive Officer of Safety and Inspection Services Command
B.S., New York University, 1987

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)

from the

NAVAL POSTGRADUATE SCHOOL
March 2005

Author: Thaddeus K. Jankowski

Approved by: Paul Stockton
Thesis Advisor

Glen Woodbury
Second Reader/Co-Advisor

Professor Douglas Porch
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

The planning methodologies used today by most U.S. fire departments are excellent for traditional missions, but wholly inadequate for the threats posed by terrorism. Planning in the fire service and the rest of the first responder community historically has relied on a one-dimensional approach that uses a scenario-based planning (SBP) methodology. This thesis argues that the fire service and others in the first responder community will be able to contribute to homeland security missions much more effectively, and efficiently, by switching to specially adapted versions of capabilities-based planning.

This thesis proposes a new integrated planning methodology that combines the planning strengths of scenario-based planning, threat-based planning, and capabilities-based planning. The new method identifies capabilities that could be used to manage and mitigate the consequences of the different types of contingencies within the various response spectrums. It allows an organization to perform analysis and efficiency studies to evaluate the different spectrums of contingencies against existing capabilities and create a menu of capabilities necessary for the first responder to respond to all its missions, including immediate threats and terrorism, in the most efficient and cost-effective manner.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

First and foremost, I want to extend my deep gratitude to my family. Thanks to my wife, Barbara, for her love, encouragement, support, and sacrifice during my studies at the Naval Postgraduate School and in my career. She encouraged and supported my participation in this program, even though she knew it would entail more inconvenience and require more sacrifice from her than anyone else. I also thank my children, Teddy, Madeline, and Thomas for rounding out my life and keeping me grounded. I want to thank my mother, who always keeps me smiling, my father whose spirit is always with me, and my sisters and brothers for their love, interest, and support in their little brother's work. I am grateful to all of them for helping and understanding the commitment necessary for this endeavor.

I would like to acknowledge my thesis advisor Paul Stockton, and my second reader, Glen Woodbury, for their guidance, advice, and enthusiastic support, and for providing timely humor and insight. The time devoted by both was well appreciated

I would also like to thank all of my professors, and the many other guest faculty, lecturers, and subject matter experts who have deepened my awareness of the issues and helped prepare me, a member of the first responder community, for the spectrum of security threats and natural disasters that are aspects of homeland security.

A word of appreciation for the Office of Domestic Preparedness, the Naval Postgraduate School, and the Fire Department of New York (FDNY) for their organizational support in this unique program.

I also want to acknowledge my colleagues in the FDNY, the Fire Commissioner, and the Chief of Department for allowing me to participate in this program. Special thanks to the Dean of Discipline who always points me in the right direction, and my past and present commanding officers for their positive and inspiring influence. Being a member of the FDNY is an honor and a privilege.

Finally, I want to dedicate this thesis to all the firefighters in the FDNY who have unselfishly made the supreme sacrifice in the line of duty. I wish especially to remember

the 343 firefighters who responded to the horrific act of terrorism on September 11th, 2001, some of them dear friends, brothers with whom I shared many good times, and who have been an unforgettable part of my life and career.

EXECUTIVE SUMMARY

The planning methodologies used today by most U.S. fire departments and other first responders are excellent for traditional missions, but wholly inadequate for the threats posed by terrorism. Planning in the fire service and the rest of the first responder community historically has relied on a one-dimensional approach that uses a scenario-based planning methodology. This thesis argues that the fire service and others in the first responder community will be able to contribute to homeland security missions much more effectively, and efficiently, by adopting specially adapted versions of capabilities-based planning.

The events of September 11, 2001, demonstrated that the nation as a whole was in a state of complacency, as far as terrorism within the United States was concerned. That event, combined with grievous terrorist acts of the 1990s such as the bombings of the World Trade Center in 1993 and the Murrah Federal Building in Oklahoma City in 1995, made it clear to millions of Americans that our intelligence community and local law enforcement agencies need improvement, and that the agencies responsible for disaster response and acts of terrorism must be better prepared than they were. Today, consequently, there is widespread popular and government support for the notion that emergency response personnel need to be better prepared to deal with terrorist activity than they are currently. A new contingency planning model will be a critical component of any effort to enhance first-responder preparedness.

At present, emergency response personnel are well prepared to respond to fires, various civil emergencies, and law enforcement issues. They still, however, are not fully prepared to respond to the numerous possible consequences of terrorist attacks. The foundation for first responder planning up to now has been what is known as scenario-based planning (SBP). This is a system not of predicting the future but rather of describing through the use of various scenarios what is likely to happen based on what is already known. The process of SBP, in other words, is to visualize an established group of distinct futures all of which are plausible, based on the experience of actual events that have happened in the past.

While it is widely used in the first responder community, SBP is inadequate to deal with the wide scope of potential developments surrounding acts of terrorism, because an infinite number of scenarios would require development. Furthermore, it would be impossible to implement every plan imaginable for the many different first responder scenarios because of the limited budgets with which first responders operate.

Threat-based planning (TBP) strategies, which have been used successfully in military planning, are emerging as a new tool in the first responder community since the terrorist attacks of 2001, in which passenger jet liners were used as weapons of mass destruction. TBP is threat driven, which means that it focuses on countering the specific threats that are most likely to occur in the present. The TBP methodology can enhance planning for response to immediate terrorist threats, but only as long as those threats conform to first responder capabilities. Because this planning strategy focuses on the immediate known threat, it is inadequate by itself to deal with the wide scope of potential events surrounding acts of terrorism and asymmetric warfare.

A planning methodology known as capabilities-based planning (CBP) has emerged in this evolving complex environment that could fill the need for new response capabilities. CBP, which is being adopted by the U.S. military, focuses on certain types of generic capabilities that contribute flexibility and adaptability, and will enable responders to meet a range of contingencies effectively, even when those contingencies cannot be predicted. Although this planning method may better prepare responders for some aspects of the homeland security mission, however, it fails to emphasize the importance of preparing for those routine events with which first responders must deal most of the time. CBP also does not address the timely planning necessary for an immediate threat when it is beyond the organization's established capabilities.

The military, fire service, and other members of the first responder community share many similarities in the way each plans and responds to threats and contingencies. Among this group, the military is moving forward fastest in developing new planning methods and adapting to possible asymmetrical threats in part through adoption of capabilities-based planning.

The Department of Homeland Security (DHS) supports the fire service and the rest of the first responder community through funding. To ensure optimal planning using allotted funds, the current contingency planning process must be updated both to better prepare emergency responders to deal with routine firefighting and emergency duties, and improve their potential response to future terrorist attacks. This new initiative merges the three different planning methodologies described above, SBP, TBP, and CBP, into an all-inclusive, adaptable planning strategy for homeland security.

The purpose of improving the first responder community's planning methodology is to define a clear sense of direction that can be followed consistently, and thus provide a rationale for developing the most relevant first responder capabilities within each organization's established limitations. Achieving the objective of optimal emergency response preparedness for homeland security in an uncertain and complex environment requires the addition of capabilities-based planning to existing first responder planning (SBP and TBP). CBP strengthens first responders' confidence by acknowledging interdependence among agencies and developing concepts that reduce gaps and seams among first responder organizations. It balances near-term capabilities with longer-term requirements, and incorporates a national perspective for emergency response preparedness to reduce strategic risk.

The new hybrid methodology would focus less on any specific response to terrorism, and more on how a terrorist might perpetrate a terrorism event. If utilized by first responders for homeland security, the new planning strategy will also help develop and maintain the capabilities and priorities that have been identified through planning exercises. To develop a counter-contingency response package, planners within the organization would simply answer the question "What can we do about a given contingency?" and then use the different strengths of the CBP, TBP, and SBP methodologies to create their plan. This combined methodology identifies capabilities that could be used for consequence management and mitigation of various contingencies that fall within the responders' mission spectrums (traditional response, immediate threats, and homeland security). Planners would carry out analysis and efficiency studies to evaluate contingencies against the organization's existing capabilities, to determine the

most effective and efficient plans. This process would result in a menu of capabilities necessary for the particular organization in question to respond to the full spectrum of contingencies, including acts of terrorism.

I. INTRODUCTION

The planning methodologies used today by most U.S. fire departments are excellent for traditional missions, but wholly inadequate for the threats posed by terrorism. Planning in the fire service and the rest of the first responder community has historically relied on a one-dimensional approach that uses a scenario-based planning (SBP) methodology. This thesis argues that the fire service and others in the first responder community will be able to contribute to homeland security missions much more effectively and efficiently by switching to specially adapted versions of capabilities-based planning.

The events of September 11, 2001, demonstrated that the nation as a whole was in a state of complacency, as far as terrorism within the United States was concerned. That event, combined with grievous terrorist acts of the 1990s such as the bombings of the World Trade Center in 1993 and the Murrah Federal Building in Oklahoma City in 1995, made it clear to millions of Americans that our intelligence community and local law enforcement agencies needed improvement, and that the agencies responsible for responding to disasters and acts of terrorism must be better prepared than they were. Today, consequently, there is widespread popular and government support for the notion that emergency response personnel need to be better prepared to deal with terrorist activity than they are currently. A new contingency planning model is critical to improve methods of response.

At present, emergency response personnel are well prepared to respond to fires, various civil emergencies, and law enforcement issues. They still, however, are not fully prepared to respond to the numerous possible consequences of terrorist attacks. The foundation for first responder planning up to now has been what is known as scenario-based planning (SBP). This is a system not of predicting the future, but rather describing through the use of scenarios what is likely to happen based on what is already known. The process of SBP is to visualize an established group of distinct futures all of which are plausible, based on the experience of actual events that have happened in the past. SBP is inadequate to deal with the wide scope of potential developments surrounding acts of terrorism because an infinite number of scenarios would require development.

Furthermore, it would be impossible to implement every plan imaginable for the many different scenarios because of the limited budgets with which first responders operate.

Threat-based planning (TBP) strategies, which have been used successfully in military planning, are emerging as a tool in the first responder community since the terrorist attacks of 2001, in which passenger jet liners were used as weapons of mass destruction. TBP is threat driven, which means that it focuses on countering the specific threats that are most likely to occur in the present. TBP can enhance planning for response to immediate terrorist threats, but only as long as the threat conforms to first responder capabilities. Because this planning strategy focuses only on the immediate known threat, it is inadequate to deal with the wide scope of potential events surrounding acts of terrorism and asymmetric warfare.

A planning methodology known as capabilities-based planning (CBP) has emerged in this evolving complex environment that may address the need for new response capabilities. CBP, which is being adopted by the U.S. military, focuses on certain types of generic capabilities that contribute flexibility and adaptability, and will enable responders to meet a range of contingencies effectively, even when those contingencies cannot be predicted. Although this planning method may better prepare responders for some aspects of the homeland security mission, however, it fails to emphasize the importance of preparing for those routine events with which first responders must deal most of the time. CBP also does not address the timely planning necessary for an immediate threat when it is beyond the organization's established capabilities.

The military, fire service, and other members of the first responder community share many similarities in the way each plans and responds to threats and contingencies. Among this group, the military is moving forward fastest in developing new planning methods and adapting to possible asymmetric threats, in part through adoption of capabilities-based planning.

The Department of Homeland Security (DHS) supports the fire service and the rest of the first responder community through funding. To ensure optimal planning using allotted funds, the current contingency planning process must be updated both to better prepare emergency responders to deal with routine firefighting and emergency duties, and

improve their potential response to future terrorist attacks. This new initiative merges the three different planning methodologies described above, SBP, TBP, and CBP, into an all-inclusive, adaptable planning strategy for homeland security.

A. THESIS ARGUMENT

The attacks of September 11, 2001, showed that the United States is no longer safe from major acts of terrorism coming from abroad, and demonstrated that these acts are often unpredictable. The United States from that day forward became a nation at risk from a new and changing asymmetrical threat, and immediately recognized the need to make homeland security a top priority.

First responders who employed traditional planning methods for emergency preparedness and response were taken by surprise by the horrific acts and consequences of the September 11th attacks. The first responder community must now consciously prepare to manage the consequences of terrorism. The Fire Commissioner of the Fire Department of New York stated in the department's 2004/2005 Strategic Plan, "The disaster demonstrated the need for us to increase our capabilities in certain areas. Within a few hours, the threats to our world had become exponentially more complex. The Fire Department, in turn, needed to adapt."[1]

First responders have reached an important turning point, from which they now have to shift their focus and planning to respond to acts of terrorism. The type and magnitude of attack and the potential scale of response require difficult choices from the first responder community to plan for operations within budget limitations. Finite personnel, equipment, and resources mean individual organizations cannot plan for everything.

While very effective for traditional missions, the first responders' current planning approach is inadequate to deal with a broad range of asymmetric threats, uncertainty, and surprise. Planners must account for acts of terrorism, and be ready to respond to the consequences of events with reasonable solutions. This can be achieved only if they bring conceptual changes to their present planning methodology. In many ways the present SBP and TBP planning methods are more than adequate to deal

[1] Fire Department City of New York, *Strategic Plan 2004-2005*, "Message From the Fire Commissioner, Honorable Nicholas Scoppetta" January 1, 2004.

successfully with most problems; they do not, however, look beyond the present to take into account the elements of surprise and horror inherent to acts of terrorism.

The incorporation of CBP with traditional planning methodologies will enable the fire service and the rest of the first responder community to perform much more effectively in the future by improving resource allocation and training. In particular, this critically important community will be better prepared to respond to possible future acts of terrorism.

In Chapter II, this thesis examines the current planning methods (SBP and TBP) used in the fire service and the rest of the first responder community, especially in the Fire Department of New York, and identifies weaknesses and problems in them when it comes to responding to acts of terrorism and homeland security. Chapter III then describes relevant new "best planning practices" used by the U.S. military that could remedy the shortfalls in first responder planning methods. The two distinct planning methodologies, SBP and TBP, used by the military and the first responder community are explored in Chapters IV and V respectively. Chapter VI discusses the new type of planning methodology, CBP, used by the military and now being considered by the Department of Homeland Security. Chapter VII introduces a new and improved first responder planning methodology for homeland security, incorporating necessary features from scenario, threat, and capabilities-based planning to develop a methodology for full spectrum emergency response and preparedness. Chapter VIII illustrates the application of this methodology to the first responder community, by applying it to a case study of the FDNY. Chapter IX concludes the thesis with a summary of its main points and findings.

II. TERRORISM AND HOMELAND SECURITY: THE NEW CHALLENGE TO THE FIRST RESPONDER COMMUNITY

A. OVERVIEW: FIRST RESPONDERS AND A NATION AT RISK

National security has changed in recent years, and the United States is now a potential target in which large-scale terrorist attacks can occur. As a result, government agencies involved in homeland security need to adapt policies to take into account the new dangers they may face. Fire departments throughout the United States are particularly at risk of being left behind because they are major players as first responders. Consequently, they must develop new ways of thinking about security problems, if they are to respond effectively to potential disasters involving fire in the twenty-first century.

This is an age in which a new kind of international criminal violates borders and ignores the ethical and moral norms most of us have taken for granted. The United States is a large and diverse area known for its power, wealth, civic freedom, and economic strength; thus there are some who view it as a prime target and the world's most vulnerable place for a terrorist attack. According to the U.S. Department of Defense's *Quadrennial Defense Review Report 2001*: "There are many threats against this nation, and they will take many forms. They range from the threat of major war to the faceless threat of terror."[2]

On February 11, 2003, Federal Bureau of Investigation (FBI) Director Robert Mueller and Central Intelligence Agency (CIA) Director George Tenet told a Senate Intelligence Committee hearing on worldwide threats that the terrorist organization al Qaeda still poses the greatest threat to the United States, despite U.S. military operations in Afghanistan and Iraq. This organization is dedicated to striking the U. S. homeland.[3] The worldwide al Qaeda network prefers hitting high-profile targets in a way that will

[2] U.S. Department of Defense, *Quadrennial Defense Review Report*, September 30, 2001, page 1, retrieved September 16, 2004 from http://www.defenselink.mil/pubs/qdr2001.pdf.

[3] "FBI and CIA say Al Qaeda is Biggest Threat," Newsmax.com, February 12, 2003, retrieved June, 12, 2004: http://www.newsmax.com/archives/articles/2003/2/11/161724.shtml.

cause mass casualties; it may be planning to use toxins or poison against targets such as government facilities, airliners, and landmarks, and is actively seeking weapons of mass destruction (WMD).[4]

According to the CIA, terrorist interest in WMD is on the rise, as is the number of potential terrorists.[5] Although the use of WMD historically has been rare, the possibility of a terrorist attack with chemical, biological, radiological, or nuclear weapons is an ongoing concern among national security policymakers, in the face of a clear trend among terrorists toward inflicting large numbers of casualties.[6] Stories about black market diversion of nuclear materials to individuals, groups, and nations in the Middle East and Asia that seek nuclear weapons have exacerbated fears that the United States will be a target.

The *National Strategy for Homeland Security* states that all disasters are ultimately local events where first responders are the first to react and the last to leave the scene.[7] The strategic objectives of homeland security as stated in the *National Strategy* are to:

- prevent terrorist attacks within the United States;
- reduce America's vulnerability to terrorism; and
- minimize the damage and promote recovery from attacks that do occur.

All terrorist incidents also are local, or at least will start that way. Effective preparedness, response, and recovery can only be achieved with the recognition that local

---

4 "FBI and CIA say Al Qaeda is Biggest Threat," Newsmax.com, February 12, 2003, retrieved June, 12, 2004: http://www.newsmax.com/archives/articles/2003/2/11/161724.shtml.

5 "Combating Terrorism, Need for Comprehensive Threat and Risk Assessments of Chemical and Biological Attack," United States General Accounting Office, GAO/NSIAD-99-163, September 1999, page 18 retrieved June 12, 2004 from http://www.gao.gov/archive/1999/ns99163.pdf.

6 Bowman, Steve "Weapons of Mass destruction: The Terrorist Threat," CRS Report to Congress, RL31332 March 7, 2002, summary page, retrieved June 12, 2004 from http://www.fas.org/irp/crs/RL31332.pdf. See also "FBI: Al Qaeda is Still Top Threat to U.S." Foxnews.com, February 6, 2003 retrieved June 12, 2004 from http://www.foxnews.com/story/0,2933,77711,00.html.

7 "National Strategy For Homeland Security," July 6, 2002, p. viii, retrieved 12 January 2004: http://www.whitehouse.gov/homeland/book/

responders are the first line of defense, and that these responders must have plans and resources to fulfill their critical roles in the fight against terrorism.[8]

The purpose of planning in the first responder community is to define a clear direction that can be followed consistently, and thus set the stage for responders to use their most relevant capabilities within existing limitations. The challenges are to plan for and acquire the needed capacity; to organize, train, and properly equip first responders; and to better evaluate the different threats to our nation than ever before.

B. EMERGENCY RESPONSE

First responders are responsible for managing the consequences of customary missions such as fires, explosions, medical emergencies, air crashes, railroad crashes, and hazardous material incidents, to name a few. They are also tasked with managing the consequences of terrorism.

The consequences of terrorism usually manifest as explosion, fire, and the collapse of structures, and potentially, in the case of chemical, biological, or radiological release, by mass casualties and widespread panic. First responders are in charge of the response management for all of those elements within their jurisdiction. No other city, state, or federal agency is in a more immediate position to perform timely consequence management on a larger scale.

The attacks of September 11th, followed by anthrax-contaminated letters sent through the regular post, attempts to bring bombs onto airplanes concealed in shoes, additional terrorist acts in Indonesia, Spain and elsewhere, and the threat of further attack by terrorists against the United States, have all served to increase the demand for sustained vigilance and the need for planned responses by government, first responders, law enforcement, health professionals, the private sector, and private citizens.

Emergency and consequence management are the application of an organized response to what is generally perceived to be a chaotic and unmanageable situation. The first responder's primary goal in response to acts of terrorism is consequence

[8] Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Fourth Annual Report to the President and Congress,* (Arlington, VA: RAND, December 2002), pp. 27-28.

management. These are the measures taken by the first responder to protect life and property, mitigate hazards, restore essential services, and provide emergency relief to individuals affected by a terrorist event.

Past acts of terrorism give us an idea of how terrorist groups attack. The first responder community must learn from what we already know, and update its planning methods while at the same time adopting new strategies to prepare for the consequence management of future events. In the aftermath of any terrorist attack, it is the first responder community – police officers, firefighters, emergency medical providers, public works personnel, and emergency management officials – who will be responsible for consequence management in what is generally perceived to be a chaotic and unmanageable situation.

Terrorist attacks most likely will become mass casualty incidents due to the violent, indiscriminate nature of these kinds of events and the intentional targeting of civilians using WMD. An effective response to a carefully executed attack using chemical or biological weapons, for example, would require rescue personnel with proper protective equipment, who would be able to haul victims out of contaminated areas, decontaminate them, and administer antidotes.[9] Many first responders have legitimate questions about the range of capabilities needed in this new environment, and how to operate optimally with available funds. First responders will still respond to fires and emergencies on a daily basis, but they now must be aware of those events that are unusual, and consider them to be possible terrorist acts. Each individual will need to use all the common sense, skill, and professionalism he or she can muster, and take advantage of constant training and preplanning to efficiently and safely manage the consequences of terrorism.

C. PREPAREDNESS

In the aftermath of September 11, 2001, policymakers and lawmakers recognized that the preparedness and response capabilities of our first responders needed to be significantly strengthened to meet the threat of terrorism in the homeland.

[9] Falkenrath, Richard, Newman, Robert, and Thayer, Bradley, *America's Achilles' Heel Nuclear, Biological, and Chemical Terrorism and Covert Attack*, The MIT Press Cambridge, Massachusetts London, England, 2001 pages 22-23.

First responders became aware of the lack of an accepted planning framework when they were confronted with a range of threats and found themselves unprepared to react effectively. This was evident in 2001 when New York City received threats of dirty bombs in the borough of Manhattan, chemical releases in the subway and rail system, and biological attacks throughout various local communities. Since the first responder community would have been unable to deal adequately with all of these events if they actually had occurred, it became apparent to them that they needed a new comprehensive and comprehendible planning process.

New York's first responders must be able to assess risks and threats across the city so that they can create specific detailed plans for use in key locations.[10] These plans have to include the identification of potential future targets, and better ways to manage both the consequences of incidents and victim care. Planners must take other agencies into consideration, such as the local Office of Emergency Management, the Police Department, the Fire Department, the Emergency Medical Division, the Department of Environmental Protection, the Buildings Department, and area hospitals, and be ready to consult them during the planning process, when necessary to ensure a coordinated response.

In planning for a terrorist attack, first responders must have a focused, detailed plan in place and then follow it as closely as the situation permits, adapting as necessary according to the fluidity of the situation. First responders must be prepared to manage the consequences of terrorism within the greatest bounds of safety for themselves. One important way planners can anticipate future events and needs is by studying past terrorist attacks, how they were initiated, and how they were abated. Once the plans are made available to all first responder organizations, members have to be trained until everyone can respond proficiently to the many conceivable scenarios. The first responder's main focus should be on the formulated plan, rather than on the threat itself.[11] There are many threats, some credible and others not. Good planning means

---

[10] Mckinsey & Company, *Increasing FDNY's Preparedness, The Fire Department of the City of New York*, August 19, 2002, page 12.

[11] Essex, Michael J., "Practical Planning for the Terrorist Event," *Firehouse Magazine* April 2002; retrieved October 2, 2004 from http://www.firehouse.com/magazine/archives/2002/April/.

that first responders will not be taken by surprise, but will be prepared to act with appropriate resources, tactics, and procedures.

D. SUMMARY

The emergency responder's main focus is on civilian safety and the minimization of damage during recovery from the consequences of a terrorist attack. The fire service and other first responders presently are struggling to ensure that they will be able to respond to terrorist threats, and are questioning traditional planning methods. What scenarios should they develop and address? What scenarios are they missing? Which threats might realistically materialize?

As our nation moves forward during these challenging times, efforts to answer the question, "How should first responders prepare and respond to acts of terrorism?" suggests a very complex problem. The first responder must be prepared to save life, mitigate hazards, and minimize damage incurred during a terrorist attack. Experience has shown that successful planning and training are the keys to providing a timely, effective, and professional response to terrorist incidents and natural disasters.

The traditional purpose of contingency planning is to provide senior decision makers in first-responder organizations with the information, analysis, and recommendations they need to formulate the best tactics and procedures to use during response. The long-established method of planning for response to fires, medical and other emergencies, law enforcement situations, and numerous other daily incidents has relied on scenario-based planning. A threat-based planning strategy has also evolved, which allows first responders to better plan for those immediate and current threats within their capabilities.

In the right capacity and at the appropriate time and place, the traditional first responder planning methods may afford an appropriate response to routine fires and emergencies – the manageable threats of the present. However, present planning methods cannot consistently or effectively ensure a safe and appropriate response to asymmetrical threats. First responders must prepare to minimize the damage and recover from any future terrorist attack that may occur despite our best efforts at prevention.[12]

[12] U.S. Department of Homeland Security, *National Strategy for Homeland Security,* July 2002, page 41retrieved January 16, 2004 from http://www.whitehouse.gov/homeland/book/.

This can only be done by taking a fresh look at present planning methods and adapting them as necessary, while considering new innovative ways to confront terrorist threats.

In his famous work, *The Art of War*, Chinese general Sun Tzu wrote words about war and conflict that remain relevant to the terrorist threats of our own times: "Do not repeat tactics that have gained you one victory, but let your methods be regulated by the infinite variety of circumstances."[13]

[13] Davis, Paul K., *New Challenges for Defense Planning: Rethinking How Much Is Enough.* page 480, Santa Monica, CA: RAND Corporation Publication MR-400-RC, 1994.

THIS PAGE INTENTIONALLY LEFT BLANK

III. U.S. MILITARY PLANNING PERSPECTIVE

A. OVERVIEW

The U.S. military has been reviewing its defense planning methodologies since the end of the Cold War. The Pentagon's *2001 Quadrennial Defense Review*, for example, focused on military readiness and modernization issues. Throughout the Cold War itself, military planners developed little in the way of paradigms or methods to guide defense planning for nonstandard contingencies (i.e., contingencies other than Department of Defense [DOD] scenarios for traditional-type war between national armed forces).[14] The accepted focus was on sharply defined scenarios that could ensure future strategic and operational adaptability. After 1990, DOD planners began to question everything from force size and objectives to the range of capabilities required, because of the changes in the threats to national security after the fall of the Soviet Union, the new range of prospective adversaries, and the need to operate efficiently with allotted funds. Their challenges have included the development and acquisition of military equipment; the training, and equipping of forces; and a cogent analysis of emerging national security objectives.

The central challenge for DOD planners is to achieve plausible results under uncertainty. To do so in the past, they have relied on TBP and SBP methodologies; now, however, the Department of Defense is moving toward the new capability-based planning methodology, which allows it to plan generally rather than specifically. This ties in with an evolving vision for the military and goal for the future called full spectrum dominance: the ability to control any situation or defeat any adversary across the range of military operations.[15]

---

[14] Davis, Paul K., *New Challenges for Defense Planning: Rethinking How Much Is Enough.* page 480, Santa Monica, CA: RAND Corporation Publication MR-400-RC, 1994., p. 24.

[15] U.S. Department of Defense, *National Military Strategy*, May 13, 2004 retrieved January 11, 2005 from http://www.dtic.mil/jcs/core/nms.html page 20.

B. TRADITIONAL PLANNING

Traditional military planning is founded on the SBP and TBP methodologies. The longstanding SBP approach, which focuses on one or several standard scenarios, makes little sense since the demise of the USSR, except for its managerial advantages during peacetime. The possible range of scenarios has expanded beyond the ability of SBP to account for them. The TBP methodology, for its part, is preeminent when threats are readily recognizable and identifiable. The planner would need to assume a reasonable threat situation, and then determine the amount of force needed to triumph. This approach lends itself to dynamic and static modeling, and provides a quantifiable foundation for the recommended force structure. TBP asks the question: "Can the U.S. military succeed against this given threat?"

The traditional military approaches to planning have merit, and have offered certain advantages to the first responder community with regard to emergency response preparedness. Now, however, the military is transforming itself by using an approach that deals with capabilities rather than focusing on particular enemies.

C. SUMMARY

The way in which the federal government views the defense of the United States has dramatically changed since September 11, 2001. Threats to the U.S. homeland will continue to be diverse and difficult to predict for the foreseeable future. Since U.S. leaders cannot know with confidence which nation, combination of nations, or non-state actors will pose a threat in the future, planning and operations must focus on the ways a potential adversary could threaten the United States, that is, on the destructive mechanism and means of delivery, rather than on a specific adversary or adversaries. Consequently, the DOD has adjusted its strategic and operational focus to encompass not only traditional military concerns posed by hostile states, but also possible asymmetric threats directed at the homeland by both stateless terrorists and hostile states.

The *National Military Strategy* describes the strategic direction that the armed forces must follow to support the nation's security and defense strategies.[16] It states that

[16] Ibid., Foreword page iii.

to be successful in protecting the United States against terrorists, the armed forces must be ready to transform themselves "in-stride" by fielding new capabilities and adopting new operational concepts.

The newest methodology military planners are bringing to their work is a CBP strategy. The difference between CBP and its forerunners is that traditional TBP focuses on the "whom" and SBP addresses the "what," while CBP concerns the "how."[17] CBP is planning, under uncertainty, to provide capabilities suitable for a wide range of modern-day challenges and circumstances, while working within an economic framework that necessitates choice.[18] This planning strategy is most useful when threats are multifaceted and uncertain, and do not lend themselves to single SBP analysis. By looking at the objective rather than at scenarios, CBP planners are able to focus on one or more specific opponents, and apply an appropriate mix of the required military capabilities. The vision for the military and the goal for the future are what is known as full spectrum dominance: the ability to control any situation or defeat any adversary across the range of military operations.[19]

[17] Author interview with Lieutenant Colonel Thomas Goss, Military Planner for Northern Command in the U.S. Army at the Naval Post Graduate School, Monterey, California, December 6, 2004.

[18] Davis, Paul K. *Analytic Architecture for Capabilities-Based Planning, Mission Systems Analysis, and Transformation*, RAND Corporation Publication MR 1513, 2002, page xi.

[19] *National Military Strategy*, Foreword page iii.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. ALTERNATIVE APPROACHES TO PLANNING: (1) SCENARIO-BASED PLANNING (SBP)

A. GENERAL METHODOLOGY

Planning for homeland defense and homeland security can take many forms, depending on whether it is scenario-based, threat-based, or capabilities-based. While these various types of planning share some aspects, each also has unique features that need to be understood if plans are to be effective. This chapter and the two that follow describe in turn what these three methods are, how they work, and how in general they differ.

The focus of SBP is on identifying and describing the most probable kinds of future operations the organization will face, and then developing a strategy and plans for a safe, successful, response. SBP is reactive planning, typically formulated to develop credible solutions to prior known incidents and outcomes. It is a method deliberately not of predicting the future but, rather, of developing response plans to different events that have a high potential for occurring because something like them has happened before. SBP attempts to develop appropriate solutions by looking at several alternative versions of possible incidents, any one of which may or may not occur.

Once planners have formulated scenarios, they recommend a strategy and tactics, after which their plans undergo testing and evaluation. This process results in a number of robust strategies that are sound and successful across several alternative scenario futures. Planning and training with scenarios provides the organizations and groups using them with common terminology; promotes a heightened sensitivity among members to signs that a particular future is developing; and furnishes a set of critical indicators they can watch to determine which event or blend of futures is unfolding.

The military provides a traditional SBP flow chart that depicts the steps involved in the SBP process. As shown below in Figure 1, a specific planning scenario is first contemplated, after which it goes through the planning procedure until a final emergency response plan results.[20]

[20] Davis, *New Challenges for Defense Planning*, page 21.

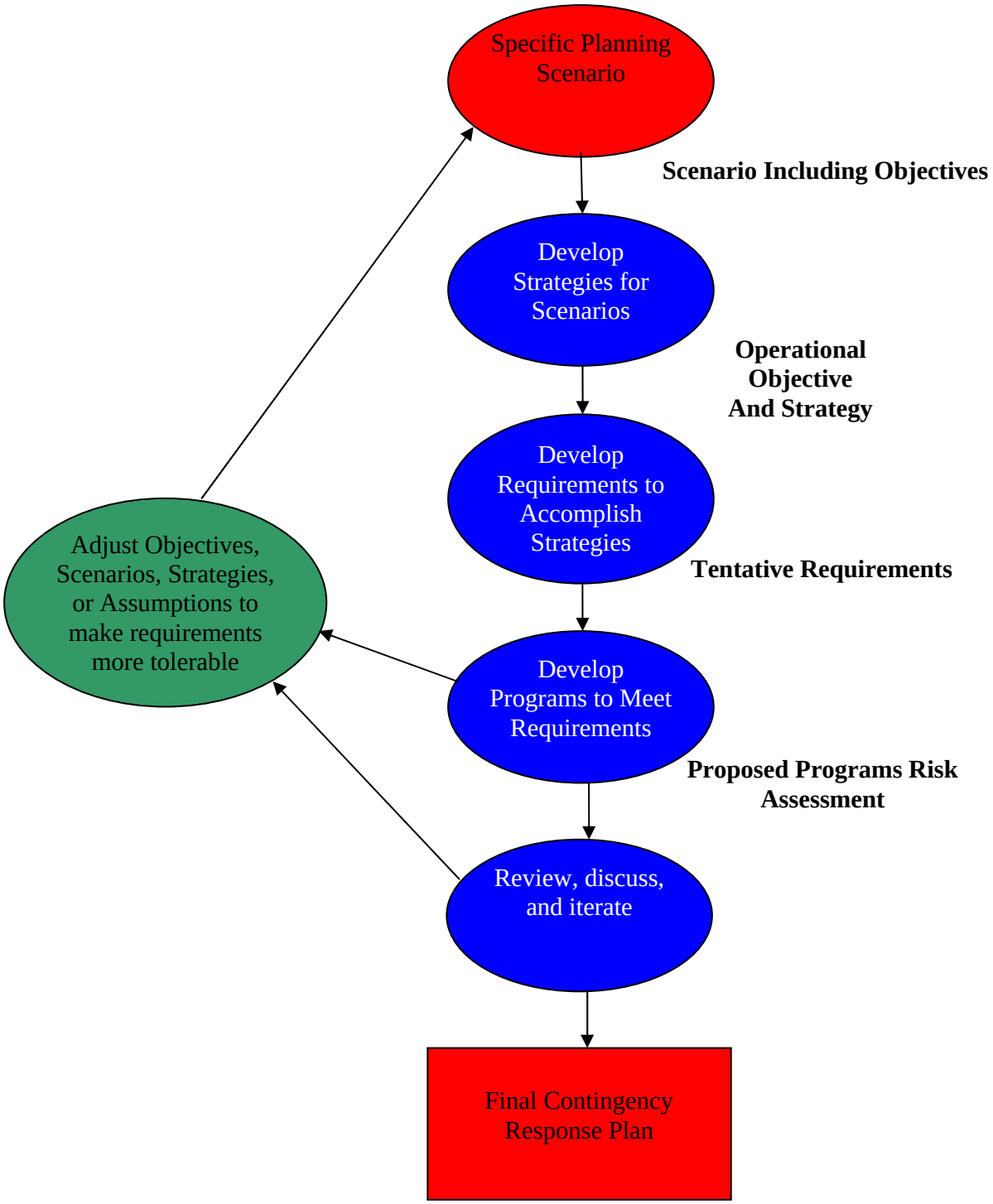

Figure 1. Scenario-based Planning Process

The goal of applying this scenario-development methodology to civilian operations has been to improve the odds of correctly predicting future emergency responses by allowing first responders to understand the driving forces affecting their organization's protocols and operations. In this context, SBP seeks to assess and prepare for near certainties in the future, so that the first responder will be able to plan for operating in those anticipated environments and react to change as necessary. The outcome of SBP is a compilation of distinct futures, all of which plausibly demand an emergency response by the organization.

B. FIRST RESPONDER COMMUNITY

The appropriate first responder plan for emergency preparedness and response is determined under SBP by calculating the response against a series of scenarios and scenario details. This is the most common planning strategy presently used by first responders. It concentrates on established emergency response missions for the fire service, the emergency medical community, law enforcement, offices of emergency management, and others, by describing an emergency situation that may have consequences greater than expected, but that are still reasonably realistic. The given scenario combines a large amount of existing, real-world information with elements or assumptions already inherent in established plans, to put forward a limited number of contingency plans with appropriate responder actions.

This planning technique examines important "What if…?" questions: if "X" scenario happens, then the first responder's plan will call for action "Y." The weakness of this method of planning involves hefty uncertainties in the scenario environment and in possible external influences on the first responder organization. It allows no operational flexibility in its design for the planned scenario, according to how events actually unfold.

SBP was most recently utilized during the 2004 Republican National Convention in New York City.[21] Planners from various counterterrorism and emergency response agencies performed "what if" exercises and then joined together in coordinating a

[21] Information regarding the Republican National Convention 2004 was provided by Assistant Chief Harold Meyers of the FDNY at FDNY Headquarters on March 4, 2005. Chief Meyers was the FDNY representative and the agency's Incident Commander.

planned response to different scenarios. The area around Madison Square Garden, the venue of the convention, was designated a “frozen zone” and was tightly secured during the entire convention. Only personnel who were credentialed by the Secret Service were allowed into this area. A multi-agency command center was set up at the New York City Police Department’s (NYPD) headquarters located at 1 Police Plaza. Representatives from all involved agencies were present at this command center. Within the “frozen zone,” planners established a tactical operations center that comprised representatives from the FDNY, NYPD, New York City Transit, Secret Service, the FBI, medical representatives from the Health and Hospitals Corporation, and other responder and law enforcement agencies.

If a chemical release were to occur inside the perimeter, a planned response scenario would ensue. The WMD desk controlled by the FBI would gather intelligence on the event and where pertinent would immediately disseminate multi-agency notifications. The federal counterterrorism agencies, along with the NYPD and the fire department's hazardous materials teams, would investigate the validity of the threat or occurrence. A joint strike team composed of NYPD and federal agencies would stabilize the area against hostile actors. The FDNY would provide decontamination and medical care to those civilians affected. Once the area was stabilized against further danger from any enemy, then the FDNY would conduct hazardous material abatement. Meanwhile, the FBI and NYPD would provide continual security to the area to ensure against any secondary occurrences.

Decontamination and medical care would continue in the so-called "warm zone" where the attack had taken place. Once victims were stabilized, they would be transported to nearby hospitals, which had been placed on high alert for the duration of the convention. Once the situation was abated, NYPD and the Department of Environmental Protection would coordinate removal of the hazardous substances, based on evidentiary and chain-of-custody requirements, and disposed of accordingly.

The advantage of the SBP strategy as illustrated above is that it is easily implemented and modified as necessary to fit selected scenarios. Scenarios are drafted to combine different possible outcomes for those situations that have been determined to be most influential. These scenarios are then put together in a format that includes a

description of the desired end state and a tactical plan for the appropriate emergency response. Any emergency response organization must ultimately be judged against some set of operational requirements – in other words, those things that first responders are expected to be able to do.

First responder operational planning scenarios examine responses to different fire, civil emergency, medical, and criminal scenes. They provide and encourage recommended actions and appropriate performance tasks, and positively convey complex events with corresponding tactics so these can easily be grasped and remembered by the first responder.

FDNY planners using SBP first researched plausible incidents and tactical scenarios, and then developed appropriate plans and tactics for response through a multi-step process (depicted in Figure 1) that had evolved over 140 years of service. This long history has served the planning process well thus far. In a changing environment, however, it could hinder successful planning for future uncertainty. Scenario planning for the FDNY has not been about predicting the future but, rather, about describing possibilities under certain circumstances utilizing experienced personnel and senior leadership in the planning process.

The benefits of scenario planning are that senior leadership are forced to break out of their standard worldview and, through developed scenarios, recognize blind spots they might otherwise have overlooked in the generally accepted forecast. Fire department and other first responder leaders thus are better prepared and able to understand the source of disagreements among them that can often occur without their even realizing it, as they are envisioning their role in different scenarios. Incident commanders and responders also will be better able to recognize a scenario in its early stages, should it be the one that actually unfolds.

1. Example of the SBP Process

The FDNY over the years developed many scenarios according to a well-defined set of conditions, and then determined the appropriate strategy and requirements for effective response. These results were then incorporated into the FDNY Official Publications and accepted as standard operating procedures.

One example of the many scenarios developed and procedurally utilized in the FDNY is for a fire in the cellar of a two-story class 4 (wood), detached private dwelling. This is a probable future that the FDNY encounters regularly. Once the scenario was envisioned, planners developed a strategy to deal with it, established requirements and reviewed protocol, and made adjustments as necessary. The plan was then approved by senior fire department officials.

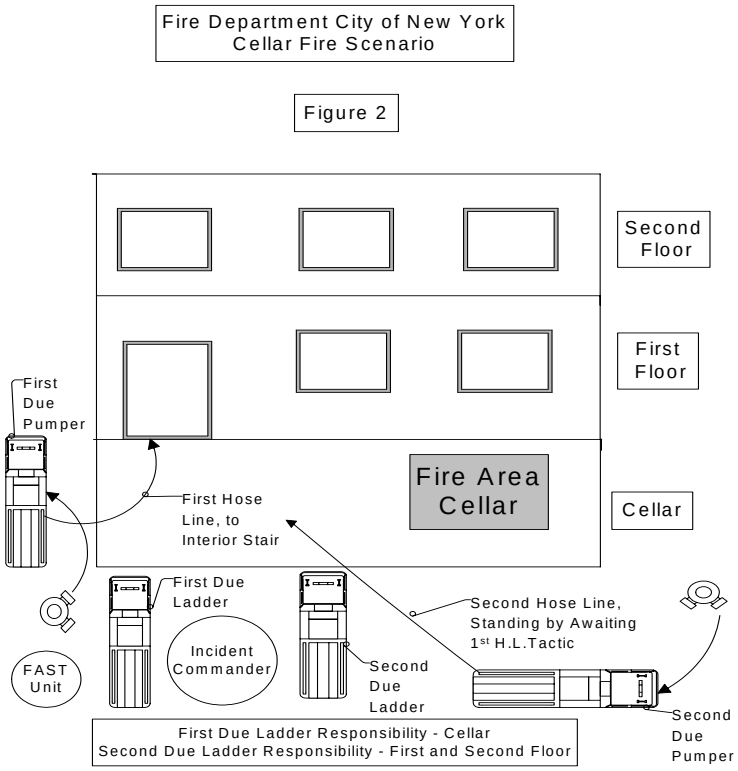

Figure 2. Private Dwelling Cellar Fire

Figure 2 illustrates a complete planning strategy for this particular fire scenario that was developed using SBP methodology.[22] The set response to this type of incident requires four engine companies, two ladder companies, a FAST[23] unit, and a battalion chief. All these units will operate per the department's standard operating procedures as depicted in Figure 2.

[22] Information for this figure was obtained from the Fire Department of New York, "Fire Tactics and Procedures, Private Dwellings" on January 1, 2005.

[23] FAST is a FDNY term for Firefighter Assist and Search Team, whose sole purpose is to ensure firefighter safety.

The standard operating procedures that have been developed utilizing scenarios have generally proved efficient for ensuring that the FDNY can provide an appropriate emergency response to most foreseeable circumstances. The present first responder planning methodology also has limitations, however, and must change and adapt if it is to predict and plan for future emergency responses in a new environment that now includes terrorism.

C. MILITARY SCENARIO-BASED PLANNING

The accepted military approach using SBP is situationally driven, meaning that it measures the defense posture of our forces against a range of scenarios and scenario details. The military plan would begin with a well-defined set of conditions at the national, theatre, regional, or global level and then assume problems or crisis. The scenario setting should reflect a greater than expected, but reasonably realistic, menace. The completely developed scenario usually combines a large amount of current, real-world information with elements of or assumptions about established plans. These often include warning and mobilization times, force levels, and where appropriate, military campaign intentions.

The SBP method was utilized, for instance, in planning for a possible war in North Korea.[24] Planners from the military performed "what if" exercises, that is, they defined a set of conditions and then assumed problems or crises, to coordinate responses to different scenarios. The scenarios they developed ranged from conflict with adequate warning, to operations for a forced-entry (invasion) situation.

If a conflict with adequate warning were to occur, then the military would first address the possible danger to regional allies who might be a target of aggression, by conducting holding operations to protect key areas. Strategic bombers would carry out blunt armor attack and hit air bases and armies. Special operations forces would go in to secure key points, provide necessary reconnaissance, and conduct diverse support operations. Ground-based air defenses would defend key airports and seaports, other important areas, and theater air space. Light infantry would defend key airports and seaports, and other important facilities. Air defense aircraft also would defend important

[24] Davis, *New Challenges for Defense Planning*, page 177.

areas, as well as attack enemy air forces. Surveillance and battle-management aircraft would support defensive operations, and aid counter-air operations.

The scenario approach to military planning as illustrated above has three clear strengths. The first is its specific and tangible focus. If the scenario is conventional (no use or threat of use of WMD), then fairly accurate planning can be undertaken once planners develop their major hypotheses. If simultaneous scenarios are anticipated, then even more specific planning can result. Finally, because of its dynamic nature, SBP encourages the recognition of clear priorities by requiring that some areas be considered more important than others.

SBP has been used regularly in the military. According to a study by the RAND Corporation of defense planning issues for the post-Cold War era, "Analysts, like generals, often spend much of their time planning for the last war."[25] In the 1991 Persian Gulf War, for instance, the United States engaged in planning based on previous incidents and scenarios projected to occur again. The military would undertake a war game with a single team playing both the blue (the United States and its allies) and red (the appropriate U.S. adversaries) teams. The red team would first devise scenarios for success against the United States and would be briefed on the outcome of strategies that played to U.S. strengths. Its members were then asked to formulate creative approaches that did not cater to those strengths. The players then switched over to the role of the blue team and developed responses to the various scenarios and threats they themselves had postulated.

D. SUMMARY

The SBP type of planning strategy is very simple to implement and has been tailored to particular types of response based on pre-selected historical and contemporary circumstances. Planners configure scenarios and their many variables based on assumptions they have obtained through past experience, along with knowledge they have gained during the process of development.

The SBP process has long been applied by the military and first responder community for standard missions, and can also be useful for many future planning

[25] Davis, *New Challenges for Defense Planning*, page 477.

requirements. There are, however, important limitations to the SBP methodology's usefulness, because the world rarely conforms to planners' expectations. SBP requires assurances about possible scenarios and is limited in its ability to cope with the number of scenarios possible in this age of domestic and transnational terrorism.

Another weakness of this planning methodology is that it produces plans only for the contingency scenarios selected, thereby limiting the scope of plans to those situations planners have considered worth pursuing. After all the work involved in planning the scenarios, there is a natural reluctance on the part of their creators not to dispute their basic underlying principles as they relate to other scenarios. Therefore, key assumptions may become fixed ideas, and hypotheses may be treated as fact. SBP tends to be directed at the past, reliving old crises rather than exploring new challenges. Napoleon Bonaparte once noted that "the biggest mistake a General can make is to paint an imaginary picture and believe it to be true."[26] Planners and response personnel can be blinded by the parameters they themselves have developed and not adapt when and where necessary.

[26] "Napoleon Bonaparte Quotes," Military Quotes.com, retrieved October 11, 2004 from http://www.military-quotes.com/Napoleon.htm.

THIS PAGE INTENTIONALLY LEFT BLANK

V. ALTERNATIVE APPROACHES TO PLANNING: (2) THREAT-BASED PLANNING (TBP)

A. GENERAL METHODOLOGY

TBP is a planning methodology that involves identifying potential threats and the possibility for occurrence, and assessing the needed response capability. It is menace-driven, which means that the strategy focuses on countering the most capable and likely threats – the specific threat of the present. TBP seeks to optimize response against specific danger.

The task when planning for a viable threat is to make reasonable assumptions based on reliable intelligence, in order to develop the appropriate threat scenario. Once the scenario is developed, the required response to the danger must be determined, utilizing a TBP process.

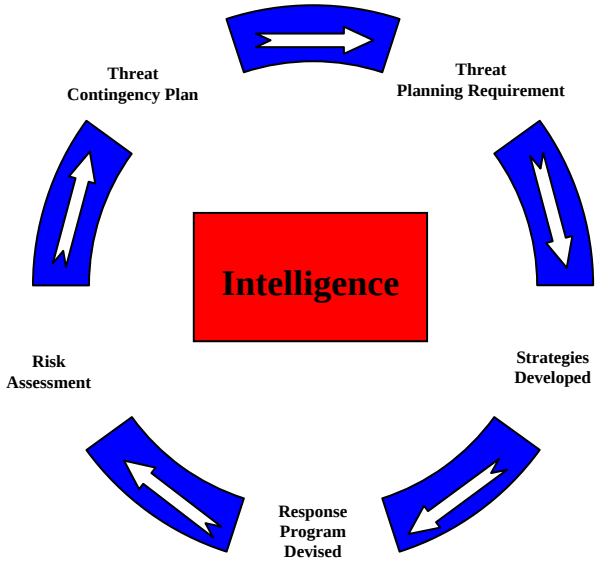

Figure 3. Threat-based Planning Process

Figure 3 shows the flow and progression of the TBP process. It begins with receipt of credible intelligence that can be used to define a set of necessary planning requirements. Once planners have identified these requirements, they propose methods for attaining them and finally develop a response plan. A risk assessment then tests the validity of the plan. On completion of the risk assessment, officials approve the final contingency plan, which is adopted as standard operating procedure for the threat at hand.

The TBP approach lends itself to lively and adaptable modeling and provides immediate justification for the recommended response, answering the question of whether or not the organization can provide a suitable solution. The disadvantage of the TBP process appears to be the difficulty of determining what represents a valid threat. TBP is situationally reactive and timely, when it can rely on early identification and immediate awareness, but it frequently creates difficulty when there is a need to adapt to sudden changes in the environment.

B. FIRST RESPONDERS

The TBP methodology is preeminent when threats to the first responder's region are easily recognizable and identifiable. Prior to the rise of terrorism in the United States, the threats that first responders most often encountered were in the form of severe weather conditions and other natural disasters, combative individuals, arson, personal injury, and the like. These traditional threats could be easily recognized and identified. Now, however, the threat arena for the fire service and others in the first responder community has changed to include the unpredictable acts of terrorism.

With known threats, the first responder plans and responds appropriately with emergency personnel and equipment, using approved tactics. This type of approach focuses contingency planning on a single threat or a combination of dangers based on recognized information. The strength of this method is its focus on emergency preparedness and response for a particular threat at a particular point in time. It helps remind senior leaders of first responder organizations that capabilities are important for the emergency response and consequence management mission. It forces the organization to consider serious threat assessments so they can devise realistic contingency plans.

The clearest example of a TBP-based strategy for first responders was evident after September 11th, 2001, when anthrax attacks, using letters mailed through the regular postal system, occurred over the course of several weeks beginning September 18, 2001. Most of these anthrax-contaminated letters were sent to news media outlets in the New York City area, including ABC News, NBC News, CBS News, and the *New York Post*. A note in the *New York Post letter* read, "09-11-01, THIS IS NEXT, TAKE PENACILIN (sic) NOW, DEATH TO AMERICA, DEATH TO ISRAEL, ALLAH IS GREAT."[27] The threat was well-defined: letters containing two different strains of anthrax bacteria were being delivered through the mail.

There was widespread panic throughout the city, and emergency response for feared and actual anthrax incidents soared. To respond to this threat, leading fire department officials immediately devised a TBP strategy: Fire department units first on the scene were to assess the situation, and if the threat was potentially viable then they were directed to evacuate and quarantine the area, and segregate those exposed. A Joint FDNY/NYPD HAMMER TEAM then would respond to confirm the likelihood of anthrax.[28] If they determined the likelihood to be minor, this unit would stabilize and remove the package for further testing.

This and many other threats occur in real time, and organizations must plan quickly to respond effectively to them. The FDNY used a TBP strategy to formulate an immediate and adequate response for the consequence management of this type of event (threat of anthrax dissemination), without unnecessarily sacrificing its limited and specialized resources. The TBP ensured that the department's Hazardous Materials unit would not become overwhelmed with false alarms generated by the ensuing panic. By focusing resources, the plan also provided for superior hazardous materials abatement. There was no further contamination, injury, or damage that occurred as a result of actions by the response teams.

---

[27] *Wikipedia Encyclopedia*, "2001 Anthrax Attacks," page 1, retrieved February 2, 2005, from http://en.wikipedia.org/wiki/2001_anthrax_attack.

[28] A HAMMER TEAM during this crisis originally comprised Hazardous Materials Technician components from the FDNY and NYPD.

C. MILITARY

The DOD has consistently assessed the nation's security program in terms of how many wars could be fought concurrently. It has geared defense programs to fight two and a half wars (1960s), one and a half wars (1970s), a multi-front global war with the Soviet Union (1980s), and lately, two "major regional contingencies."[29] The TBP approach involves recognizing potential adversaries and evaluating their capabilities. The point of departure is often an assessment of the balance of capabilities between adversaries. Recent changes to the security environment make the TBP approach to planning more difficult than it was during the Cold War.

The strength of TBP is that it focuses individual contingency plans on individual enemies, based on known information about the threats they pose, while also taking into account both the comprehensive balance of power, and the specific conflict situation. The TBP approach, which seeks to optimize U.S. forces against a specific threat, reminds strategists and military planners that capabilities are important and count in warfare. This knowledge requires them to perform in-depth assessments and devise realistic scenarios.

This planning methodology was prevalent during the Cold War, when U.S. defense planning was dominated by the threat from the Soviet Union. It was also used during planning for the confrontations in Iraq, where intelligence on the opponent's strengths and weakness was available to researchers and analysts, who were able to compile a realistic threat profile and formulate a plan of attack.[30] This planning methodology has proved exceptionally useful for planning against a state opponent because threats tend to be slow moving, obvious, and understandable. The drawback to TBP is the difficulty in determining what represents a valid threat. The U.S. military is superior to all others in conventional warfare and presently is the only superpower in the world. Nation-state adversaries will not directly attack the United States because they know that the chance of success is small.

The TBP methodology is essentially incident-reactive and timely, which means planners could have difficulty adapting to sudden changes in the threat environment.

---

[29] Davis, Paul K., Gompert, David and Kugler, Richard "*Adaptiveness in National Defense: The Basis of a New Framework,"* RAND Corporation Publication IP 155, 1996, retrieved June 16, 2004 from http://www.rand.org/publications/IP/IP155.

[30] Ibid.

The TBP strategy is prejudiced toward quantitative data, such as numbers of people, units of energy, or types and quantities of weapon systems. These figures can, however, be misleading and over-reliance on them might cause analysts to overlook, underrate, or overestimate important qualitative factors like experience, leadership, morale, or strategy.

With the TBP methodology, the DOD has used point-threat scenarios as test cases for planning, because TBP provides a single, simple yardstick against which to measure the adequacy of U.S. forces. While this procedure is relatively easy to explain and thus is useful to gain support from lawmakers, especially when threats are authentic and clear, too often, the threats on which it bases its results are vague and lack credibility.

D. SUMMARY

The pitfall of the TBP strategy for emergency responders is the difficulty in determining what constitutes a valid threat, especially in large metropolises like New York City, Washington D.C., and Los Angeles. TBP is inherently reactive, and responders who rely on it could have great difficulty in adapting to sudden changes in the environment. Furthermore, like SBP it retains a bias toward responding to threats that are known, but is unable to address all the emerging unknowns.

The myriad of unpredictable, asymmetrical threats have profound implications for defense planning. Terrorism – the strategy of the weak against the strong – is an asymmetric strategy. This reality has compelled responders to shift from a TBP methodology that addresses the symmetric enemy, to a CBP strategy that addresses needed capabilities for the many unknowns.

THIS PAGE INTENTIONALLY LEFT BLANK

VI. ALTERNATIVE APPROACHES TO PLANNING: (3) CAPABILITIES-BASED PLANNING (CBP)

A. GENERAL METHODOLOGY

CBP is increasingly being used by the military to develop capability plans for a robust defense force to meet designated objectives. Using CBP, planners assess existing defense capabilities according to real-world needs, and then offer a comprehensive plan for the best way to allocate limited resources among the required capabilities. Thus CBP represents a flexible and cost- effective basis for planning.

CBP differs from the Cold War-era SBP and TBP methods used by the military and first responders up to now. CBP is planning under uncertainty, in order to provide capabilities suitable for a wide range of modern-day challenges and circumstances, while working within a budgetary framework that necessitates choice.[31] It is a planning strategy that encourages innovation. It provides a good basis for making future decisions, while making planning more responsive to risk, uncertainty, and economic limitations than other forms of planning. CBP lowers the threshold of concern by allowing a collection of future possible and theoretical threats to be ranked by importance. Defense capabilities are then formulated to counter this broader, long-term range of potential threats.[32]

[31] Davis, *Analytic Architecture for Capabilities-Based Planning*, xi.

[32] Ibid.

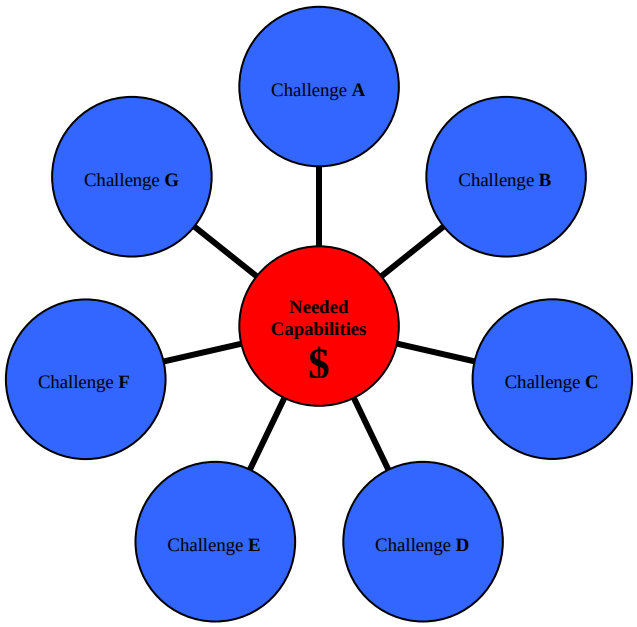

Figure 4. Capabilities-based Planning Concept

Figure 4 is a depiction of the CBP concept by which an organization with limited funding seeks and acquires the necessary capabilities to respond to different challenges. CBP is a universal planning approach designed to identify the most appropriate options required to meet present and future priorities. In essence, a given capability is tested against several scenarios, and the result used to determine the kinds of capability actually required in each type of situation. CBP, then, concentrates on what is to be accomplished and how it will be achieved, rather than on limiting options according to existing equipment, personnel, and organizational structures.

When CBP is properly implemented, one of the key benefits lies in its ability to help take the focus away from individual missions. CBP identifies the levels of capability needed to achieve an overall strategic goal, lack of which has been a common problem across many disciplines.[33] CBP satisfies strategic goals and requirements for the organization using chosen scenarios to derive necessary capabilities, and appears to be most efficient for considering responses to acts of terrorism.

[33] The Technical Cooperation Program, Joint Systems and Analysis Group Technical Panel 3, "Guide to Capability-based Planning" retrieved on October 10, 2004: http://www.dtic.mil/jointvision/ideas_concepts/auscanzukus_tp3cbp.doc.

B. FIRST RESPONDERS AND HOMELAND SECURITY

Homeland security became a top priority for U.S. leaders after the events of September 11, 2001. A "National Preparedness Goal" was developed with the objective of strengthening the preparedness of the first responder community and the nation as a whole. This objective, is expected to be accomplished by building an appropriate blend of homeland security capabilities and measuring them against unyielding standards.

Homeland Security Presidential Directive 8 (HSPD-8) establishes policies to prevent, respond to, and recover from threatened or actual domestic terrorist attacks, major disasters, and other emergencies.[34] This directive requires the Office of State and Local Government Coordination and Preparedness to provide state, tribal, and local jurisdictions with final guidance on nationally accepted preparedness capabilities in the first three months of 2005.[35] HSPD-8 also outlines requirements for national preparedness to "all hazards," which include disaster, emergency, and terrorism preparedness. It requires the establishment of a national all-hazards preparedness goal that sets the standards for preparedness across all mission areas, and delineates a minimum acceptable level of capabilities to respond to emergencies.[36]

CBP is designed to provide information about the capabilities needed at different levels of government to prevent, respond to, and recover from incidents of terrorism or natural and other disasters. It supplies an important piece of a common national readiness model, and a combined national readiness perspective.[37] This method will allow all jurisdictions and responders to know what resources they need to reach optimal preparedness, so they can make knowledgeable choices about using scarce resources in order to achieve a reasonable level of preparedness. CBP is designed to involve all levels of emergency response and preparedness from government to first responder organizations. This is a shared effort to develop and implement a national approach to preparedness.

---

[34] U.S. Department of Homeland Security, *Homeland Security Presidential Directive 8:* "National Preparedness Implementation Status Overview," NEMA Midyear Conference, September 2004, page 2, retrieved February 26, 2005 from http://www.nemaweb.org/?1084.

[35] U.S. Department of Homeland Security, Office of State and Local Government Coordination and Preparedness (DHS/SLGCP), Questions and Answers from "Capabilities Workshop," October 12-14, 2004, Washington, D.C., page 2.

[36] *Homeland Security Presidential Directive 8*.

[37] U.S. Department of Homeland Security, Questions and Answers from "Capabilities Workshop."

National Planning Scenarios were prepared by the Office of Domestic Preparedness using the CBP process because large scale attacks exceed the ability of most jurisdictions and responders to deal with them. Therefore, preparedness involves the capacity to prevent, respond to, and recover from large-scale incidents, and to identify a range of potential events for which the nation must prepare.

The National Planning scenarios were developed by experts from the homeland security community, to define a range of probable large scale threats and hazards for which the first responder community needs to be prepared. The defined scenarios do not address every possible event, but rather are the least of what first responders should prepare for and be expected to respond to; they thus serve as a planning tool from which tasks and capabilities can be developed.[38] These scenarios illustrate the need for planners at all levels to make effective decisions and to ensure that limited resources will be used effectively in enhancing preparedness.

The CBP process is designed to provide the first responder community with information to make informed decisions about how best to build and maintain the capabilities needed for prevention, response, and recovery from acts of terrorism, natural disasters and other large-scale events. CBP helps enhance preparedness by building a network of capabilities throughout the country that can be brought together when needed, thus reducing the burden to any one jurisdiction.

The involvement of agencies and organizations from all levels of government and the private sector is critical for first responders to build the capacity to prevent, respond to, and recover from a range of large-scale events as well as smaller events. The National Preparedness Goal mandated by HSPD-8 will be met by achieving target levels of capability based upon national priorities or preparedness objectives. The purpose of the directive is to realign existing strategies, goals, objectives, and implementation steps for entities at all levels of government, and thereby establish a national approach toward improving preparedness.[39] Responders and jurisdictions will decide what capabilities they need to enhance their own preparedness, but many emerging threats and hazards are

[38] U.S. Department of Homeland Security, Questions and Answers from "Capabilities Workshop."

[39] Ibid.

national in scope, and the adoption of a national preparedness strategy, especially with regard to threats and acts of terrorism, is vital to our nation's security.

The National Homeland Security Strategy directs first responders to make difficult choices about resources allocation so they will be able to protect the most people and critical assets with the assets they have. There are presently fifteen National Planning Scenarios, defined as the threats and hazards that present the greatest national risk, for which all jurisdictions and first responders must be prepared and have the capabilities to respond.[40] They are as follows:

1) Explosive Attack – Bombing Using Improvised Explosive Device
2) Chemical Attack – Toxic Industrial Chemicals
3) Chemical Attack – Chlorine Tank Explosion
4) Biological Attack – Aerosol Anthrax
5) Chemical Attack – Nerve Agent
6) Chemical Attack – Blister Agent
7) Radiological Attack – Radiological Dispersion Devices
8) Biological Attack – Plague
9) Biological Attack – Food Contamination
10) Nuclear Attack – Improvised Nuclear Device
11) Cyber Attack
12) Biological Attack – Foreign Animal Disease (Foot and Mouth Disease)
13) Natural Disaster – Major Earthquake
14) Natural Disaster – Major Hurricane
15) Disease Outbreak – Pandemic Influenza

C. MILITARY CAPABILITIES-BASED PLANNING

A secure homeland is the nation's first priority and is fundamental to the successful execution of the nation's military strategy.[41] Threats to the United States will be diverse and not easy to predict in this changing environment where terrorism has

[40] U.S. Department of Homeland Security, *Target Capabilities List: Version 1.0*, Office of State and Local Government Coordination and Preparedness, January 31, 2005, page 2, retrieved March 1, 2005 from http://mmrs.fema.gov/Main/Events/Target%20Capabilities%20List-Version%201.0.pdf.

[41] U.S. Department of Defense, "Homeland Security Joint Operating Concept" February 2004, page 9, received December 1, 2004 from http://www.dtic.mil/jointvision/hls_joc_v1.doc.

emerged as the weapon of choice for some of the country's enemies. To meet responsibilities associated with securing the homeland, DOD must simultaneously defend the national territory, provide civil support to civil authorities as directed, and help prepare for emergencies.[42]

The United States faces a range of state and non-state threats to its security. There are hostile states equipped with conventional and strategic capabilities and non-state terrorist groups who seek unconventional weapons. In order to meet the responsibilities associated with securing the homeland, the military is transforming the way that it plans. SBP was good for evaluating past occurrences and as a support of other planning methodologies; however, the results of SBP are strongly influenced by arbitrary assumptions that are the result of compromise. The TBP approach is also limited by its reliance on the known, and does little to guard against adversaries who would like to exploit the standard planning approaches presently used by the DOD. The transformation underway is concerned with changing the military culture into one that encourages innovation and intelligent risk-taking. The overall goal is to produce a better military by redefining how planning is performed and wars fought.[43]

A few important new directions for the DOD were set forth in the latest *Quadrennial Defense Review* report. It calls for the military to move away from the "two major theater wars" force planning construct, and to adopt a new framework for assessing risk. This new planning method will shift from the most recent “threat-based” model to a “capabilities-based” model that will more accurately determine the nation's strategic and operational challenges, and the best means to address them.[44]

Achieving the objectives of the National Military Strategy 2004 in an uncertain and complex environment requires a CBP approach to force design and planning that focuses less on a specific adversary or the location of a conflict, and more on how an adversary might fight.[45] Far from assuming threat or uncertainty to be irrelevant,

---

[42] U.S. Department of Defense, “Homeland Security Joint Operating Concept” February 2004, page 9, received December 1, 2004 from http://www.dtic.mil/jointvision/hls_joc_v1.doc.

[43] Davis et al., “Adaptiveness in National Defense," page 2.

[44] *Quadrennial Defense Review*, page 4.

[45] U.S. Department of Defense, *National Military Strategy*, 13 May 2004. Government Printing Office, 2004, Washington, DC, page 3, retrieved January 11, 2005: http://www.dtic.mil/jcs/core/nms.html.

however, CBP seeks to manage the risk and allow for variation. The CBP approach uses operating concepts to drive planning and to guide the development of capabilities. It ensures that joint forces can adapt and succeed across a broad range of scenarios. This approach must anticipate and rapidly adjust to changes in the security environment to ensure that the United States improves its qualitative advantage over a more diverse set of adversaries now and in the future.

The DOD intends CBP to be a core concept in its future planning as directed in the 2001 *Quadrennial Defense Review*. Since U.S. leaders do not know with confidence which nation, combination of nations, or non-state actor(s) will pose a threat, DOD must focus planning and operations on *how* a potential adversary *could* threaten the United States, rather than on the identity of a specific adversary.[46] To manage the difference in defining the problem and in developing the solutions with resource constraints requires a system of capable and ongoing identification and assessment of risk. To win the global war on terror, the U.S. armed services must be flexible, light and agile, "so that they can respond quickly to sudden changes in the world."[47]

D. SUMMARY

Terrorism has emerged over the last decade or so as a serious threat to the United States. First responders not only must be ready to deal with millions of medical needs, fires, emergencies, and law enforcement incidents throughout our nation on a daily basis, but must also have the capabilities to plan effective responses. Furthermore, planners have to provide for the health and safety of the first responders as they carry out their missions. CBP appears to be the planning solution required by the first responder community in this new uncertain environment.

---

[46] U.S. Department of Defense, *Homeland Security Joint Operating Concept*, February 2004, page 2, retrieved December 1, 2004 from http://www.dtic.mil/jointvision/hls_joc_v1.doc.

[47] Garamone, Jim, American Forces Press, "Rumsfeld Tells Congress Changes Needed to Increase Flexibility" February 5, 2003, received October 28, 2004: http://www.au.af.mil/au/awc/awcgate/dod/n02052003_200302057.htm

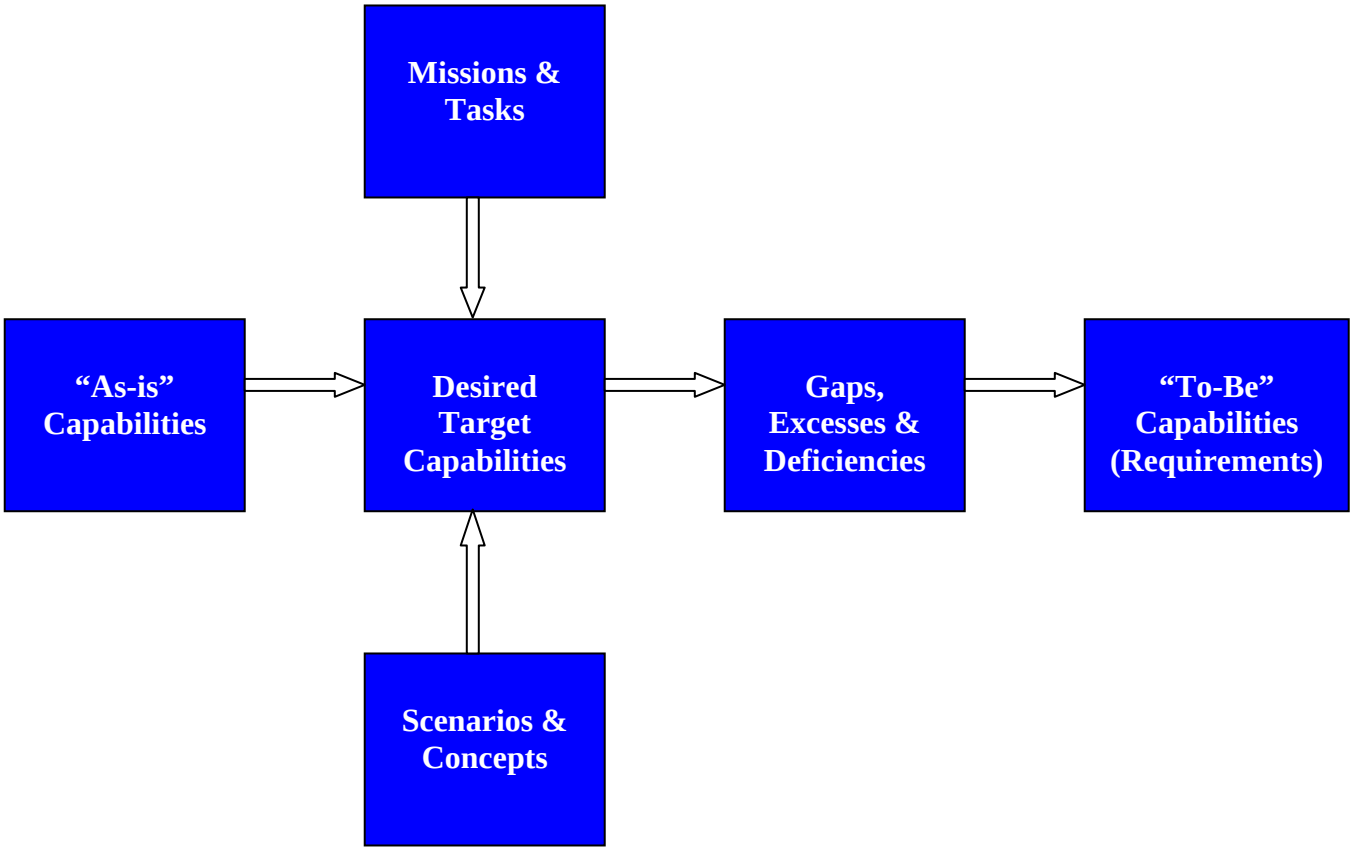

Figure 5. Capabilities-based Planning Process.

Figure 5 above illustrates the CBP process.[48] An organization possesses certain "as-is" capabilities that are fundamental to it. CBP evaluates target capabilities according to the organization's missions and tasks and the various scenarios and concepts it is likely to encounter. Once planners identify the desired capabilities, they will be able to highlight existing gaps, excesses, and deficiencies, and thus enable the organization to meet its necessary "to-be" capability requirements.

CBP appears to be an efficient way to prepare for possible large-scale terrorist attacks, with their many unknowns and uncertainties. It allows first responders to take into account scarce resources so that the organization can make logical choices and set priorities. CBP is an excellent tool for planning for the vast scope of potential terrorist

[48] U.S. Department of Homeland Security, *Homeland Security Presidential Directive 8:* "National Preparedness Implementation Status Overview," NEMA Midyear Conference, September 2004, page 6, retrieved February 26, 2005 from http://www.nemaweb.org/?1084.

attacks. Combined with the traditional first responder SBP and TBP planning strategies, CBP will enhance the ability of the first responder community to plan and respond effectively to all hazards, including the consequences of terrorism.

THIS PAGE INTENTIONALLY LEFT BLANK

VII. FIRST RESPONDER PLANNING METHODOLOGY FOR HOMELAND SECURITY

A. REASON FOR A NEW PLANNING METHODOLOGY

Homeland security has become a core mission at all levels of government from emergency response to law enforcement agencies. The vague and varied nature of terrorism poses a particular problem for personnel in the fire service and other agencies in the first responder community who are responsible for contingency planning for emergency response and preparedness. Planning and resource development is made more difficult because it requires effective coordination at every level of the first responder organization and between others throughout the first responder community.

First responder organizations carry out contingency planning under the rubric of "preparedness." The National Response Plan recognizes the critical nature of planning and defines this important purpose, thus:

> ***Preparedness***: The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability to prevent, protect against, respond to, and recover from domestic incidents. Preparedness is a continuous process. Preparedness involves efforts at all levels of government and between government and private sector and nongovernmental organizations to identify threats, determine vulnerabilities, and identify required resources.[49]

Preparedness provides for adequate first responder planning for emergency response by requiring that organizations have the necessary information needed to develop appropriate tactics and procedures for future contingencies. The dilemma facing the fire service and others in the first responder community is the need to develop contingency plans that will utilize existing capabilities in an effective manner for the homeland security missions. Preparedness, therefore, for first responders is to be able to implement effective actions at the appropriate time and place, to achieve successful consequence management for the many varied events.

Until recently, first responder planning focused on the need to deal with any viable fire, health, emergency, or law enforcement incident that the organization would or

[49] U.S. Department of Homeland Security. *National Response Plan*, Final Coordination Draft, August 2004, page 71.

could encounter. Planners limited themselves to the different scenarios that were most likely to be encountered, so that they could ensure future strategic and operational effectiveness. For traditional and routine missions, this detailed planning has served to ensure optimal operational effectiveness, and must not be sacrificed now or in the future. However, because this method is so detailed, it prevents the first responder organization from preparing for a full spectrum of events, including response to acts of terrorism.

The vital challenge for the first responder community is planning under uncertainty. As discussed previously, first responders have used several different planning methodologies characterized by SBP and TBP. Although these approaches were adequate to plan for traditional emergencies, it is clear that they display individual planning weaknesses that make them ineffective in the current homeland security setting.

The weakness of SBP lies in deep uncertainties in the scenarios it relies on, and in the external influences on the first responder organization. SBP has focused on the requirements for standard scenarios, and does little to improve plans and capabilities according to a much wider scope of possible scenarios. In reality, the world rarely conforms to planners' expectations. Furthermore, after planners have gone to all the work of developing the chosen scenarios, they may naturally be reluctant to question their work's basic underlying principles as those principles relate to other scenarios. In other words, the established scenarios tend to take on a life of their own: key assumptions may become fixed ideas, and hypotheses may be treated as fact. SBP ultimately tends to be directed at the past, reliving old crises rather than exploring new challenges.

The flaw of the TBP process, for its part, appears to be the difficulty of determining what represents a valid threat. An organization must be able to recognize and characterize preeminent threats in order for this methodology to be successful. TBP is situationally reactive and timely, depending on early identification and immediate awareness. This planning methodology also has difficulty adapting to sudden changes in the security environment, but it is superior to SBP when threats are real and clear. If, however, this is not the case, plans might not be able to deal with sudden changes in the security environment.

CBP is a universal planning approach that provides a generic menu of necessary capabilities for planners. The weakness of this method when used alone is that first

responders will most often be contending with well-known traditional contingencies that require more specific planning for effective response than CBP can offer. The military emphasized this methodology after the Cold War because there was no longer a distinct or identifiable enemy like the Soviet Union to plan against. The one constant in the first responder community, by contrast, is that it will continue to respond to the kinds of distinct traditional threats and missions for which specific planning is necessary. CBP moves the focus of planning away from obvious and common missions and the routine response toward more general capabilities for various generic responses.

The new first responder planning methodology proposed in this thesis requires anticipating and planning for future needs, with better management of the strategies and initiatives that are necessary for successful full spectrum response. This includes developing, expanding, and updating procedures and exchanging operational information within the first responder community. It also involves improving the ability to assess risks and threats, and to plan accordingly in order to create effective response plans while prioritizing training and investments in new resources.

The need for better planning for the future is evident throughout the fire service and the rest of the first responder community. The FDNY Chief of Department stated: "One of this administration's primary concerns is to assess how we chart a new direction for the future and still maintain our traditional core values of service, bravery, safety, honor, dedication and preparedness."[50] This was apparent to others in the Department, as well. According to Fire Commissioner Nicholas Scoppetta: "The disaster demonstrated the need for us to increase our capabilities in certain areas. Within a few hours, the threats to our world had become exponentially more complex. The Fire Department, in turn, needed to adapt."[51]

---

[50] Fire Department City of New York, *Strategic Plan 2004-2005,* "Message From the Chief of Department, Frank P. Cruthers," January 2004.

[51] Fire Department City of New York, *Strategic Plan 2004-2005,* "Message From the Fire Commissioner, Honorable Nicholas Scoppetta," January 2004.

B. FOUNDATION OF PLANNING METHODOLOGY

This proposed first responder planning methodology for homeland security will evaluate reasonable strategies without losing sight of the safety of the first responder, within limited budgets. It must effectively deal with the customary range of responses, immediate threats, and other asymmetrical acts of terrorism, for future emergency preparedness planning. A new first responder planning methodology for homeland security necessitates crossing all planning boundaries. It needs to include the traditional SBP and TBP strategies while incorporating CBP for future efficient response. This new strategy will:

- Assess capability options for effectiveness in operations
- Identify a menu of capability needs
- Make requirement choices, and devise ways to achieve success
- Provide for first responder safety in response and operations
- Provide continued effective response for routine emergency missions
- Allow for response to immediate threats
- Provide an adequate response to acts of terrorism
- Provide an integrated framework to addresses future emergency preparedness and response, and risk tradeoffs
- Allow for adaptable planning with a limited budget.

The fusion of the three planning strategies into an all-inclusive methodology allows the first responder community to continue to plan for traditional missions and present threats, and at the same time develop future homeland security scenarios within organizational budgets.

Figure 6 shows how the three planning methodologies support and complement each other, while crossing all planning boundaries and limitations: the strength of each individual planning methodology makes up for the weakness of the accompanying methods. The result is a stronger, more adaptable planning methodology for present and future use than those available before terrorism became such a national threat. It also allows a layered level of planning for asymmetrical threats and other contingencies.

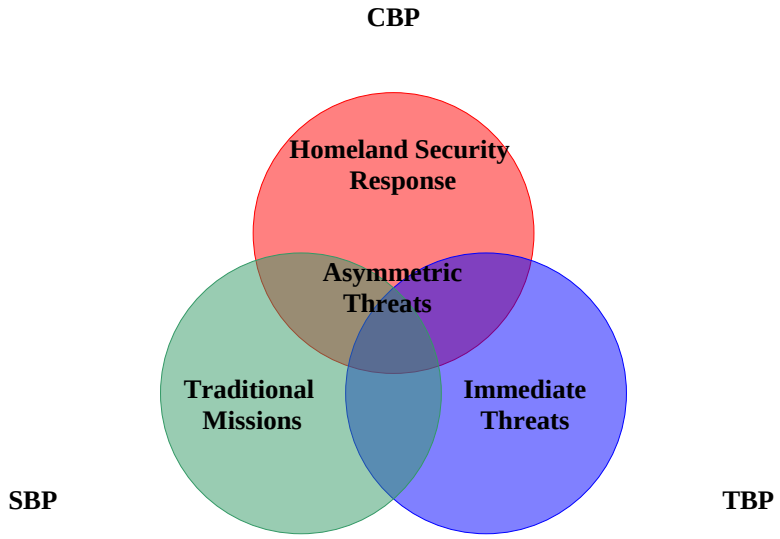

Figure 6. Foundation of the New First Responder Planning Methodology

CBP provides a complete assessment of the capabilities needed for overall emergency response and preparedness by the organization, and lends a broader worldview to planning. First responder organizations require a menu of capabilities in order to be successful in response within a limited economic framework. SBP provides for concentrated planning, and is used to develop necessarily detailed response and operational plans for common traditional missions. TBP is concerned with the present, allowing the first responder organization to prepare in depth for acknowledged threats that are discernable in real time. It, along with CBP, is necessary for overall planning for future consequence management of contingencies involving terrorism and homeland security.

C. GOAL AND PURPOSE OF PLANNING

The vision and goal of this new first responder planning methodology is to allow the fire service and the rest of the first responder community to prepare for full spectrum emergency response preparedness. This is the ability to plan for, control, and adequately

respond to any and all emergency situations that an organization might encounter. A superior response to the vast range of contingencies likely to confront the first responder community demands that first responders transform their planning to focus on key capability areas. The DHS presently requires the first responder community to develop joint first responder capabilities, operating concepts, functional theories and critical enablers that are adaptable to the diverse conditions surrounding response.

Full Spectrum Emergency Response Preparedness (FSERP) for the fire service and the first responder community recognizes the need, first of all, to identify and integrate all emergency response activities, including responses to acts of terrorism. The first responder community's missions and objectives are wide in scope and are not all-inclusive.

Figure 7. First Responder Mission Spectrums

As Figure 7 shows, there are three distinct spectrums of contingencies for which organizations within the first responder community need to be prepared: 1) traditional response – first responders must continue to provide effective response to their traditional and most common missions; 2) immediate threats – they must be able to respond to the timely and immediate threats of the present, using appropriate intelligence; and 3) homeland security – responders must establish and maintain the necessary capabilities for future response to acts of terrorism and other homeland security missions. Developing emergency response mission spectrums for first responder organizations is important to fulfilling FSERP requirement, and is integral to this new planning methodology.

Planners then need to break the three mission areas down into the specific contingencies that might be encountered within these broader categories.

A written spectrum of potential contingencies must be prepared by every first responder organization, and recorded in a Spectrum of Potential Contingencies table, illustrated by Table 1.

Table 1. Spectrums of Potential Contingencies

	Spectrum A **TRADITIONAL RESPONSE**		**Spectrum B** **IMMEDIATE THREATS**		**Spectrum C** **HOMELAND SECURITY**
A1		B1		C1	
A2		B2		C2	
A3		B3		C3	
A4		B4		C4	
A5		B5		C5	
A6		B6		C6	
A7		B7		C7	
A8		B8		C8	
A9		B9		C9	
A10		B10		C10	
				C11	
				C12	
				C13	
				C14	
				C15	

Table 1 shows how the spectrums of potential contingencies that a first responder organization might face would be laid out. The three mission columns are ranked left to right according to the potential frequency of encounter. Spectrum A would contain contingencies that will be encountered routinely, the traditional missions of the first

responder organization. Spectrum B contingencies may be encountered less frequently, but represent the real-time security threats of the present. First responders are to develop and implement preparedness measures as appropriate utilizing the Fire and Emergency Services Preparedness Guidelines. Spectrum C contingencies are rare, but still fall under DHS recommendations for preparedness.

While this full spectrum emergency response assessment directs preparedness planners to the most likely threats, it also illustrates other, less likely threats that may occur just the same. Threats are ranked in each of the spectrum columns, from the most frequent likely occurrence (1) at the top, to the less frequent in descending order. It is important to note that "frequency" is not related to the severity of the consequences of an event. This illustrates the likelihood of occurrence for the first responder organization, and is a tool to assess a potential emergency response, for which the first responder organization requires specific capabilities to carry out effectively. This contingency menu will require modification according to the demands of the ever-changing emergency response environment.

Spectrum A contingencies account for the majority of organizational responses annually, and will continue to demand detailed planning if first responder organizations are to ensure they will be able to respond effectively. By contrast, an organization would need regularly to adjust the assessed probability for threats illustrated in spectrum B based on intelligence or perceived changes in vulnerabilities (for example, during a special event), or elevation of the homeland security threat advisory level.

The homeland security and national preparedness response contingencies that make up spectrum C must be addressed by each organization because of their potential to occur during a terrorist attack. According to DHS recommendations, all jurisdictions and first responders must be prepared for these national planning scenarios and acquire the necessary capabilities to respond. These threats and hazards, which are of national significance with high credibility, consequence, and probability, provide the design basis for national preparedness goals, emergency responder capability requirements, and implementation of the National Response Plan.

While greatly oversimplified, the graph illustrated by Table 1 offers a clear enough assessment of the threat for planners to identify and develop the defensive lines of operation and cross-cutting capabilities they will need to counter threats to homeland security.

Table 2. Spectrums of Potential Contingencies for Law Enforcement

	Spectrum A **TRADITIONAL LAW ENFORCEMENT RESPONSE**		**Spectrum B** **IMMEDIATE LAW ENFORCEMENT THREATS**		**Spectrum C** **HOMELAND SECURITY RESPONSE**
A1	Larceny	B1	Domestic Violence	C1	Explosive Attack
A2	Breaking or Entering	B2	Rioting	C2	Industrial Chemical Attack
A3	Aggravated Assault	B2	Drug Trafficking	C3	Chlorine Tank Explosion
A4	Motor Vehicle Theft	B3	Murder for Hire	C4	Aerosol Anthrax
A5	Robbery	B4	Hostage Situation	C5	Nerve Agent
A6	Forcible Rape	B5	Bomb Threat	C6	Blister Agent
A7	Murder		**Homeland Security Threat Advisory**[52]	C7	Radiological Dispersion Device
A8	Illegal Drugs	B6	Low Condition – Green	C8	Plague
		B7	Guarded Condition – Blue	C9	Food Contamination
		B8	Elevated Condition – Yellow	C10	Nuclear Device – Improvised
		B9	High Condition – Orange	C11	Cyber Attack
		B10	Severe Condition – Red	C12	Foreign Animal Disease
				C13	Major Earthquake
				C14	Major Hurricane
				C15	Pandemic Influenza

[52] Department of Homeland Security's Threat Advisory System represents an increasing risk of terrorist attacks. First responders are to develop and implement preparedness measures as appropriate, according to the Fire and Emergency Services Preparedness Guidelines.

An illustration of a potential contingency assessment can be seen in Table 2. This is a general illustration of the spectrums of potential contingencies for a law enforcement organization. The table of potential contingencies depicts the different spectrums this organization will encounter, from column A, the most frequent, to the less frequent column C. Within each spectrum the contingencies are ranked in descending importance, from 1 at the top, which is the most frequent, down to whatever is the least frequent in that column. The contingency rated A1 (larceny), for instance, is a contingency in the traditional, common response category, with a high frequency of occurrence. A contingency rated C15 (pandemic influenza) is in the homeland security spectrum, with a low frequency for occurrence. This provides the law enforcement organization, the ability to assess the potential emergency response, for which the first responder organization requires capabilities.

Contingencies in spectrum A are the majority of the law enforcement organizations response. This agency would adjust the assessed probability for threats illustrated in spectrum B based on intelligence or changes in vulnerabilities, or elevation of the homeland security threat advisory level. Threats B-1 through B-5, are immediate traditional threats received. Threats B6 through B10 are threats ranked according to the Homeland Security Threat Advisory System for which the organization must have planned protective measures.

Spectrum C contains the homeland security and national preparedness responses to be considered for potential occurrence during a terrorist attack. The law enforcement organization requires capabilities to respond.

This law enforcement illustration is an example of the assessment process for the threats that may be encountered by a member of the first responder community. The spectrum of potential contingencies is necessary to identify and develop necessary plans and capabilities needed to counter the potential threats.

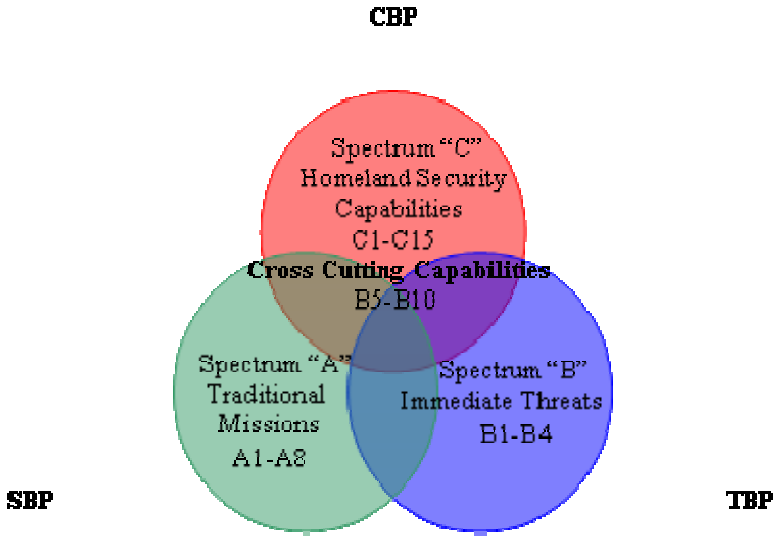

Figure 8. Emergency Response Planning Template - Organization Specific

Figure 8 illustrates an emergency response planning template that can be adapted to specific organization needs for all spectrums of contingencies. Such a template enables first responder planners to develop and adapt plans, identify the common resources and capabilities available to counter each assessed contingency, and then implement those plans. This kind of contingency and threat assessment must be performed by every first responder organization. To develop a contingency response package, planners from within the organization would simply answer the question "What can we do about the contingency?" and then develop appropriate response plans by utilizing the strengths of the CBP, TBP, and SBP methodologies.

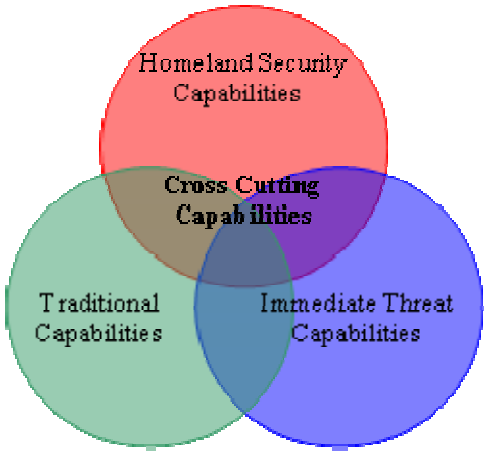

Figure 9. Spectrum of Necessary Organization Capabilities

Figure 9 shows the spectrum of necessary organization capabilities that first response planners would develop as the planning process goes forward. Each organization would identify those capabilities that it could use to manage and mitigate the consequences that might arise from the different type of contingencies within the three spectrum areas. Planners would then perform analysis and efficiency studies to assess the usefulness of capabilities that already exist to meet a given spectrum of contingencies, and to determine their usefulness for the different spectrums of contingencies within homeland security. This process would result in a menu of capabilities necessary for an organization to respond to a full spectrum of contingencies.

Finally, planners would create and evaluate the necessary operational concepts to enable the organization's plans and capabilities to be used in the most effective way for successful management and mitigation of consequences arising from the many different types of contingencies. This step would allow planners to identify and coordinate resources and required personnel, by simply determining what tactics and procedures and steps should be taken, and by whom, in the event of a warning that a particular

contingency might unfold. Development of a spectrum of necessary organization capabilities would give the organization a broad, adaptable menu of capabilities for an effective response to a full spectrum of contingencies.

Figure 10 below explains how this first responder planning methodology for homeland security progresses. Each first responder organization must have a dedicated planning group that will continuously assess the contingencies an organization may face. This group has to be aware of the organization's budget, and the limitations it imposes on the planning process. The organization's missions and objectives must be clearly defined, so that the planning group is able to consider the full spectrum of emergency response, from the traditional missions of the past, to the immediate threats of the present, and possible homeland security threats of the future, when performing an optimal contingency assessment, using a table of potential contingencies.

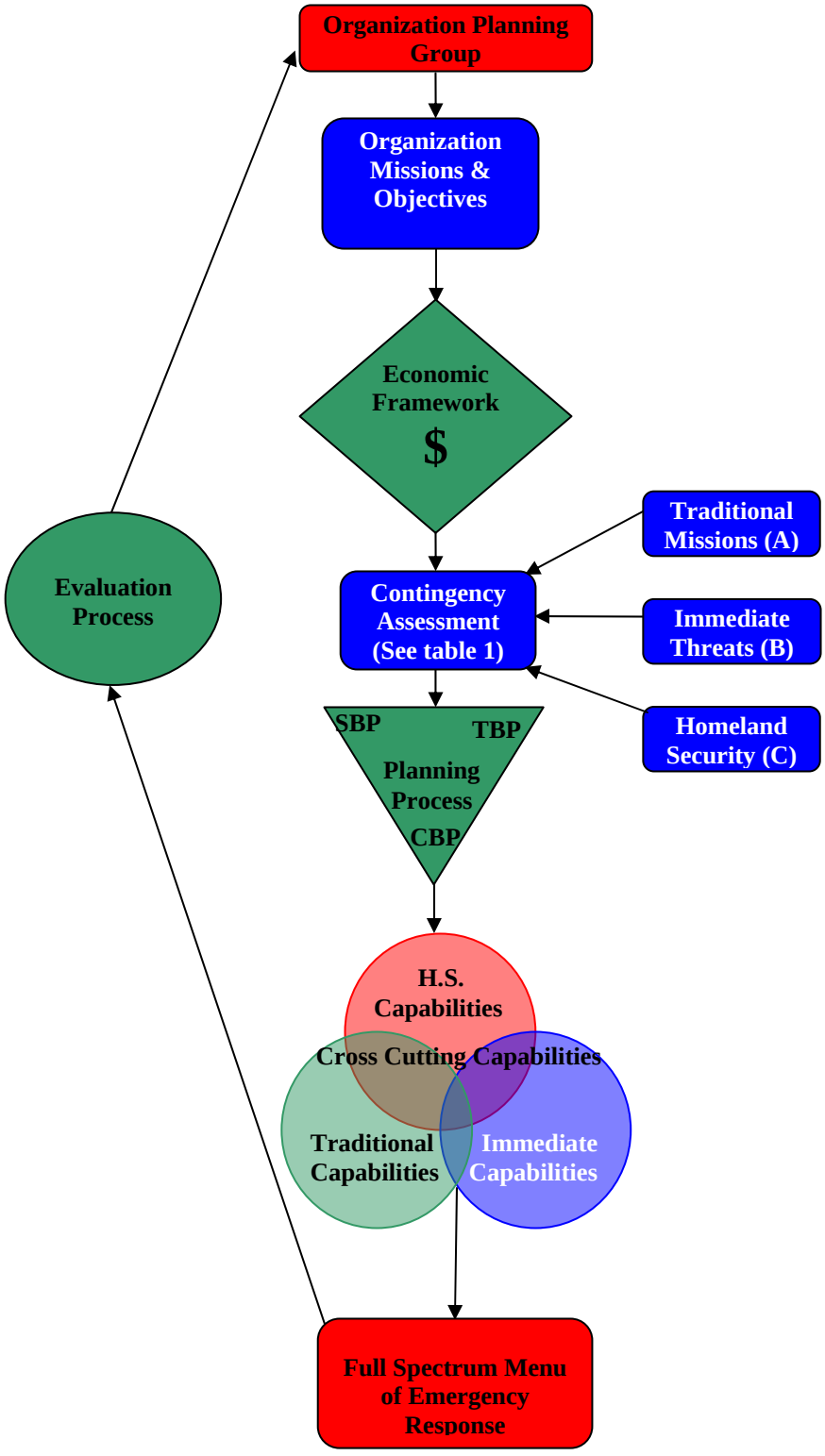

Figure 10. First Responder Planning Methodology for Homeland Security

The planning group will assess existing capabilities against potential contingencies (which were determined during a previously completed contingency assessment), beginning with the contingencies in spectrum A. They proceed through the other spectrums, identifying which capabilities could be adapted to meet the new set of contingencies. When necessary, the organization will seek new capabilities to enhance its response to a broad spectrum of contingencies.

Planners must then decide on the necessary organization capabilities required for an effective response to all the contingency spectrums. Beginning with spectrum A, the most frequent organization response, the planning group evaluates “as–is” capabilities. These are capabilities an organization already possesses for traditional missions. They then move to spectrum B, again assessing the organization's “as-is” capabilities against the set of capabilities that will be needed to meet immediate threats, and respond to the homeland security threat advisory system. The organization will then look at the third contingency spectrum, column C, and again compare capabilities to ensure its readiness to respond to acts of terrorism and support homeland security.

After completing this assessment the planning group places the required capabilities into a contingency spectrum for plans and capabilities as seen in Figure 11 below, and devises a menu of capabilities and detailed response plans which becomes the organization's concept of operations.

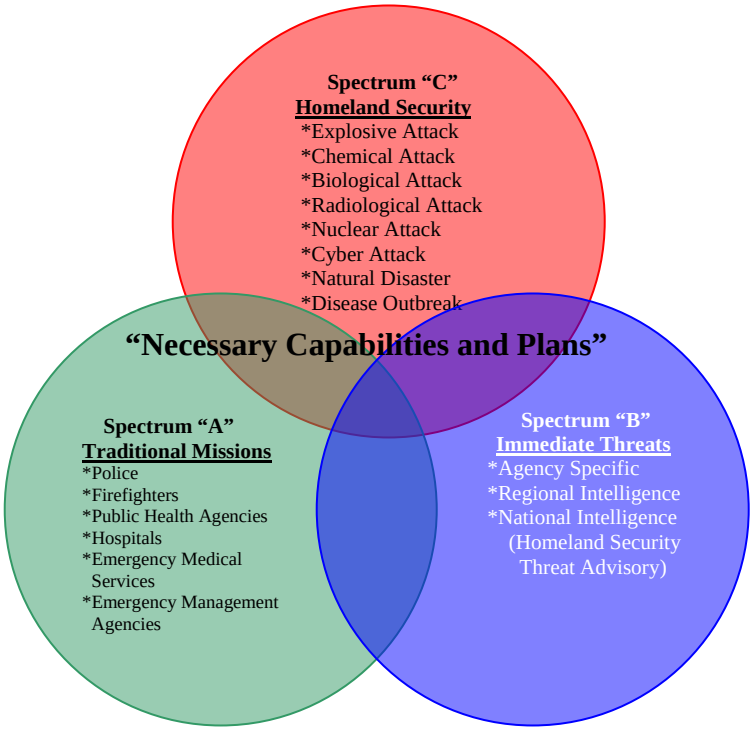

Figure 11. Contingency Spectrum of Plans and Capabilities

Once the contingency assessment is complete an organization could prepare its response to a contingency X in spectrum C, the homeland security spectrum. (See Figure 12 below.) It may have plans and capabilities already in place in spectrum A, from traditional mission Y, for example, that will be useful for meeting X. Planners find there are also plans and capabilities that can be utilized in spectrum B from immediate threat Z. Thus an organization can improve its efficiency by using these analytical tools to evaluate a potential homeland security contingency in spectrum C, against the capability possessed by an organization for traditional missions in spectrum A, and in the context of spectrum B.

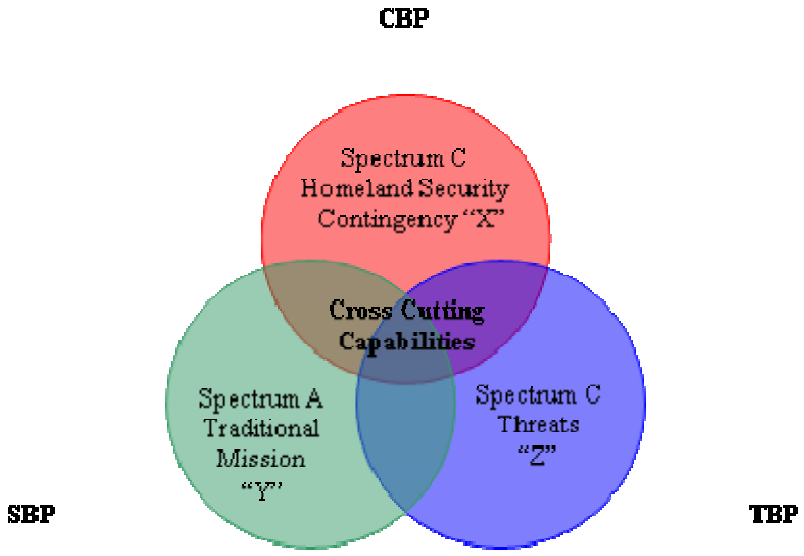

Figure 12. Cross-Cutting Capabilities for Successful Response

When it uses a CBP planning strategy, an organization is not just planning for all the threats or possible homeland security contingencies individually, but is looking for cross-cutting plans, capabilities, and efficiencies so that the organization truly has "capability" plans that can be used to address all the contingencies an organization might encounter in spectrums A, B, and C simultaneously.

The planning process concludes by using the strengths of CBP, TBP, and SBP to form emergency preparedness and response plans. Once in place, each contingency plan is evaluated and adapted as necessary in order to ensure that the organization maintains its strengths and obtains necessary new capabilities for effective response. The strengths of this new planning methodology are its adaptability to current and future contingencies, and its promotion of effective tactics and procedures for optimal response within a strict budgetary framework.

D. SUMMARY OF THE STRENGTHS AND BENEFITS OF THIS NEW PLANNING METHODOLOGY

The purpose of planning in the first responder community is to define a clear direction that can be followed consistently, and thus set the stage for responders to use their most relevant capabilities within existing limitations. The challenges are to plan for and acquire the needed capacity; to organize, train, and properly equip first responders to meet the many different first responder missions and objectives.

To achieve these objectives, first responder planning and design should incorporate CBP into existing planning methodologies, to move the focus away from specific acts of terrorism toward how a terrorist might perpetrate a terrorist event. This CBP approach uses emergency response and preparedness concepts to drive planning and to guide the development of response capabilities. It ensures that first responders can adapt and succeed across a broad range of scenarios.

The recommended new planning methodology allows the organization to create a broad portfolio of responder capabilities that will perform robustly for uncertain future environments, including the unique challenges of homeland security, while ensuring continued success in traditional missions. Extrapolating from the military models of planning, the first responder community is coming to recognize that SBP is limited to information based on past events. TBP focuses on response for timely threats of the present. CBP assesses the range of capabilities needed for overall preparation for consequence management of future events, regardless of how they might be perpetrated.

If utilized by first responders for homeland security, this combined planning strategy will foster the development and maintenance of necessary capabilities and priorities that are identified through planning exercises. First responders will ensure that their organization will possess a number of standard capabilities to continue emergency response and to respond to acts of terrorism. These future capabilities, once obtained, will help define what the first responder must be able to do in order to detect, deter, and prevent attack, and, when necessary, mitigate the effects of attacks that do occur. The first responder community's missions and objectives are wide in scope. Figure 11 shows that the requirements of the three spectrums of contingencies, though different in their specifics, could be met with similar capabilities.

First responders continuously attempt to plan better, as evident in the FDNY Strategic Plan 2004/2005, which states: "The New York City Fire Department's highest priority is to enhance its ability to respond to fires, emergencies, pre-hospital care emergencies and terrorist acts. The Department's strategy to increase operational preparedness focuses on investing in the continued enhancement of core capabilities."[53]

The first responder planning methodology for homeland security provides much strength to an organization filling in the seams and gaps of emergency response and preparedness for homeland security missions. Capability is evaluated using reasonable situations summarized in the development of contingency plans. The scenarios planners develop plans that lie on a spectrum ranging from real world planning for traditional missions, through immediate planning for known threats, and include future response using generic plans and capabilities. These scenarios and contingency plans reflect the type of tasks that first responders will undertake.

This planning methodology emphasizes the recommendations of the DHS, which are informed by national security information relating to terrorism. DHS recently established a set of fifteen standard threat scenarios to provide a baseline for planning, and funds training for response incidents and crises for which the first responder community must be prepared. It strengthens first responder confidence by developing concepts that reduce gaps and seams among interdependent first responder organizations. Through a balance of near-term capabilities with longer-term requirements, this method better fulfills DHS requirements, and incorporates a national perspective for emergency response preparedness into the plans of local responder organizations.

The new planning methodology is superior for planning with uncertainty, to provide capabilities suitable for a wide range of challenges and circumstances, while working within an economic framework that necessitates prioritization and choice. It allows first responders to adjust rapidly to changes in the environment so they may improve their qualitative advantage over a more diverse set of required emergency responses, now and in the future. "Preparedness is the key to mitigating an

[53] Fire Department City of New York, "Strategic Plan 2004-2005", January 1, 2004, page ii.

emergency."[54] This new planning paradigm will help better prepare the fire service and others in the first responder community, those heroes first on scene, rushing in as everyone else is rushing out.

[54] Nicholson, John, *Terrorism: Impetus for Change*, NFPA Journal, November/December 2001 p. 45.

VIII. APPLICATION TO THE FIRST RESPONDER COMMUNITY: THE FIRE DEPARTMENT OF NEW YORK CITY

A. FIRST RESPONDER CASE STUDY: THE FIRE DEPARTMENT OF NEW YORK CITY

In this chapter, the experiences of the FDNY will serve as a case study to examine how the proposed First Responder Planning Methodology for Homeland Security can serve to improve preparedness planning.

1. Organization Overview

The FDNY is one of the largest first responder organizations in the United States, with over 11,000 firefighters, 3,000 EMT and paramedics, and about 1,000 support personnel. This department faces a wide range of potential contingencies related to terrorism, and continues to respond to over two million emergency situations and fires annually.

New York City is a densely populated, culturally and racially diverse area. It is one of the nation's business centers, and a well-known symbol of freedom, wealth, democracy, and the American way of life; thus it makes a prime target for terrorist attack. Emergency response and preparedness, is a challenging task for the FDNY in this very uncertain security environment.

The mission statement of the FDNY emphasizes the critical need for the organization to be ready to respond to the challenges of terrorist incidents, incidents involving hazardous materials, and the more routine fires and emergencies. The statement reads, "As first responders to fires, public safety and medical emergencies, disasters and terrorist acts, the FDNY protects the lives and property of New York City residents and visitors."[55] Preparedness is one of the organization's core values. The FDNY leadership has expressed this need to adapt and improve response operations to current and future needs by "enhancing preparedness planning to address new threats and complex, long term challenges" which includes the threat of terrorism. [56]

[55] Fire Department of New York City, *FDNY Strategic Plan 2004-2005* (New York City Fire Department, January 1, 2004), p. i.

[56] *FDNY Strategic Plan 2004-2005*, p. ii.

Ironically, although the department faces annual reductions in operations funding due to continuous budget cuts, the department's missions, goals, and objectives continue to expand because of terrorism threats and homeland security requirements. The department's Bureau of Operations, where emergency response preparedness and planning are conducted, therefore must work to develop a more efficient and effective planning process that serves to ensure efficient and effective response to all missions, while doing "more with less."

2. Planning Process

The actual planning process until recently has been informal, relying on several teams of experienced fire officers and firefighters to work together to solve specific problems not addressed in existing plans. The members chosen for these teams have come from within the various commands of the department (safety, operations, hazardous material, special operations, training, tactical, and emergency medical services); when necessary, they also have sought cooperation with other agencies.

The planning process begins with a specific task and flows through various steps until it results in a plan. As the plan develops it receives input from specialists and other resources. Once complete, the plan is tested and then sent to the Chief of the Bureau of Operations and the Chief of Department, as well as to various other senior staff chiefs, for comment before being sent out to the Bureau of Training and field units, where it is implemented and adapted as necessary. This informal process has encountered many problems as a means both to develop effective plans and to efficiently test and implement them. FDNY needs an improved, more formal planning process if it is to acquire the varied capabilities it needs to prepare for new missions involving terrorism and homeland security, and coordinate normal planning for emergency response and preparedness.

The new Center for Terrorism and Disaster Preparedness was established within the Bureau of Operations to begin this shift to a formal planning process. As its name indicates, the center is closely involved in matters regarding terrorist acts in New York City. This center is the key unit for organizing planning teams composed of

knowledgeable and experienced personnel within the department. These teams will both develop necessary staffing and equipment, and recommend implementation of new plans, tactics, and procedures.

3. Applying the New Planning Methodology

To see how the new combined planning strategy can make a real-world difference take the example of a terrorist attack involving toxic chemicals: How should the FDNY respond to a series of chemical releases across the city while continuing simultaneously to provide effective traditional response on demand? The proposed new First Responder Planning Methodology for Homeland Security (CBP, SBP, and TBP) will help solve this and related problems by providing a clear framework in which to first assess potential threat capabilities and then develop a full spectrum of measures for response and preparedness. The resulting menu of emergency response capability packages will serve to prepare first responders for both terrorist events and homeland security incidents, while continuing to provide for effective traditional emergency response.

4. Contingency Assessment

The example of a planning group at the FDNY Center for Terrorism and Disaster Preparedness can illustrate the use of this planning methodology for emergency response threat assessment. The potential contingencies that the FDNY might encounter can be seen in the FDNY table of potential emergency response contingencies (Table 3). From this table planners can begin to develop a menu of operations capabilities for the FDNY to meet them. The potential contingencies for the FDNY fall into three distinct spectrums of threat: A) Traditional FDNY Fire Missions and Response; B) Immediate Threats to New York City; and C) and Homeland Security Response.

Table 3. FDNY Spectrums of Potential Contingencies

	Spectrum A **TRADITIONAL FDNY RESPONSE**		**Spectrum B** **IMMEDIATE THREATS TO NYC**		**Spectrum C** **HOMELAND SECURITY RESPONSE**
A1	Nonstructural Fires		**Immediate Traditional Threats – Intel**[57]	C1	Explosive Attack
A2	Medical Emergencies	B1	Medical Emergency	C2	Industrial Chemical Attack
A3	Vehicle Fire/Emergency	B2	Water Resource Emergency	C3	Chlorine Tank Explosion
A4	Transformer Fires	B3	Arson	C4	Aerosol Anthrax
A5	CO Emergency	B4	Natural Disasters	C5	Nerve Agent
A6	Utility Emergency[58]	B5	Rioting	C6	Blister Agent
A7	Structural Fires	B6	Bomb Threat	C7	Radiological Dispersion Device
A8	Railroad (Fire, Emergency)	B7	Impending Air Crash	C8	Plague
A9	Major Emergency[59]		**Homeland Security Advisory System**[60]	C9	Food Contamination
A10	Haz Mat Incident	B8	Low Condition – Green	C10	Nuclear Device – Improvised
		B9	Guarded Condition – Blue	C11	Cyber Attack
		B10	Elevated Condition – Yellow	C12	Foreign Animal Disease
		B11	High Condition – Orange	C13	Major Earthquake
		B12	Severe Condition – Red	C14	Major Hurricane
				C15	Pandemic Influenza

As this assessment illustrates, there is a wide range of contingencies that the department needs to prepare for. Table 3 lists approximately thirty-seven threat contingencies that demand an effective department reaction. Ten of these (spectrum A)

[57] Threats not related to terrorism such as arson, personal injury, and weather.

[58] Gas, electrical, water, and steam emergencies.

[59] Collapse, airplane crash, train derailment, multiple casualty incidents.

[60] Department of Homeland Security's Threat Advisory System represents an increasing risk of terrorist attacks. First responders are to develop and implement preparedness measures as appropriate, according to the Fire and Emergency Services Preparedness Guidelines.

are traditional missions needing a standard fire department response, for which SBP has been used with success. There are twelve potential immediate-type threats contingencies (spectrum B) that require a TBP methodology to prepare the department for immediate response. And then there are fifteen homeland security preparedness scenarios (spectrum C) for which the department must use a CBP approach to devise an effective response strategy. The FDNY Table of Potential Contingencies shows the plausible occurrences for which this department requires certain capabilities to respond effectively, and highlights the need for FDNY to be ready to adapt to an ever-changing situation.

5. Contingency Spectrums

The three contingency spectrums in Table 3 are rated based on first responder missions and frequency of occurrence. Frequency, however, is not related to the severity of the consequences. Spectrum A includes contingencies that will be encountered frequently. Spectrum B contingencies will be encountered less frequently, and spectrum C contingencies are rare. While it directs preparedness planners to the most likely threat, this full spectrum emergency response/contingency assessment also depicts other, less-likely threats that may occur just the same. They are ranked in order from the most serious (1) to the least serious in descending order in each of the three columns.

The assessed probability for traditional fire or emergency incidents (spectrum A) ranks them by frequency: A1 through A10. These are the most likely and critical events for FDNY first responders, accounting for over two million responses annually. The department must ensure a continued effective response for these missions.

The assessed probability for threats to New York City (spectrum B) will be adjusted by the FDNY based on intelligence "chatter" or perceived changes in vulnerabilities (for example, during a special event in New York City), or the elevation of the homeland security threat advisory system. B1 through B7 relates to threats the department receives regarding traditional missions, such as impending natural disasters and arson. These threats are based on timely intelligence. B8 through B12 represent the threats related to the intelligence behind the homeland security advisory system, which is designed to trigger protective measures when specific information about a threat to a specific sector or geographic region is received. It combines threat information with

vulnerability assessments and provides communications to public safety officials and the public. The development of preparedness measures for the different color codes requires a process similar to the methodology used in the new planning model. Planners analyze capability requirements and menus for the different contingencies using “as-is” capabilities. Once seams and gaps are identified, they can be eliminated with the acquisition of necessary new capabilities. The threat-based color-coded system helps the FDNY create a concise generic menu of necessary capabilities to meet its mission goals.

The homeland security-national preparedness spectrum (C) must be addressed in the department's contingency planning because of the potential for terrorist attack. These are the asymmetrical threats and hazards, including acts of terrorism that DHS believes present the greatest potential risk and potential to the nation as a whole. National Planning scenarios have been designed by DHS to help first responder organizations design capabilities that will enable them to respond effectively to these types of events. All jurisdictions and first responders are supposed to consider these National Planning Scenarios in their emergency response and preparedness plans, and put the necessary capabilities in place.

While greatly oversimplified, the example of contingency potentials illustrated in Table 3 is a sufficient assessment of threat for planners to use to formulate an effective operational plan that includes the appropriate capabilities needed for successful responses.

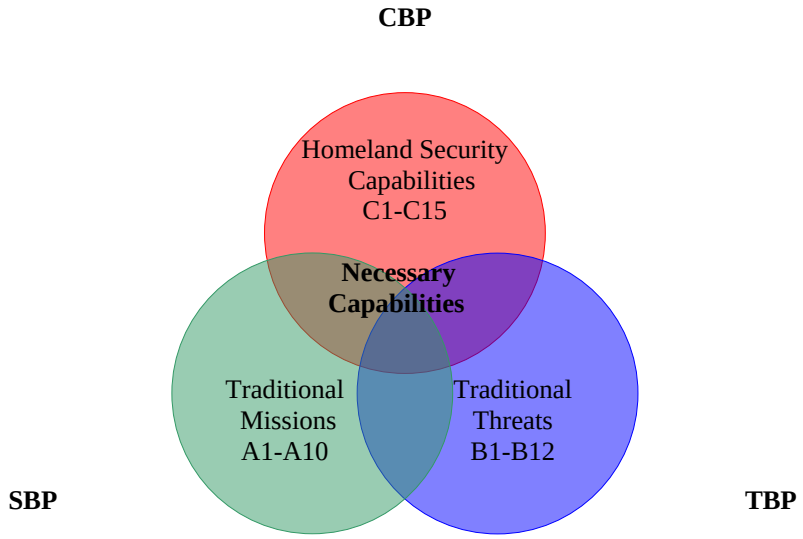

Figure 13. FDNY Contingencies and Necessary Capabilities

6. Benefit of Contingency and Threat Assessment

The type of contingency and threat assessment depicted in Figure 13 can help the FDNY determine contingencies and the necessary capabilities to meet them. By starting with a clear scheme, FDNY planners can develop plans and obtain resources to respond to each predicted contingency capability, incorporating these plans into the department's tactics and procedures, as soon as possible. One example of a plan that needs to be formulated is the potential contingency simplified as C-2 in the table of FDNY potential contingencies in NYC: "industrial chemical attacks." In order for FDNY planners to develop a consequence management response, planners from various commands inside the FDNY would answer the question "What can be done about C-2?"

In a planning meeting of representatives from the Bureau of Fire Operations (Firefighting, and Emergency Medical Services – EMS), senior staff, and specialized internal agencies like Special Operations would first identify the capabilities and operational concepts that could be used to manage and mitigate the consequences of this type of terrorist attack. This step would also allow planners to determine and coordinate

the personnel, equipment and other resources necessary to operate during this type of attack simply by describing what steps should be taken and by whom in the event of a warning of "industrial chemical attacks".

7. Formulating the Plan

The FDNY would formulate plans and determine the necessary capabilities for potential emergency response contingency C-2. One role of these plans is to integrate and coordinate units, operations, and resources from all the tactical commands and support agencies that could participate in contingency operations for the department. For example, the Chief of Operations down through borough and division commanders in the threatened areas could implement unit response plans and coordinate the specific procedures for industrial chemical attack with the Police Department, the Office of Emergency Management, and other necessary agencies, while simultaneously continuing to respond to more frequent traditional missions.

Senior staff and representatives from EMS at headquarters could also develop a response plan and tactics and procedures for industrial chemical attack that identifies required combinations of specific EMS units, personnel, equipment, and other resources. This is the point at which they will analyze the "as-is" capabilities of the FDNY, compare them to the actual needs of the C-2 scenario, and then be able to identify the capabilities that will need to be acquired. Each possible contributor to the contingency mission (FDNY Hazardous Materials Unit, Special Operations Command, Operational Units, Safety Command, Logistics and Support, the Bureau of Operations, the Bureau of Fire Communications, and others) identifies options for necessary capabilities, specifying units and resource requirements, including the means necessary to utilize those capabilities. Also at this time, planners will determine any specialized capabilities they might require and incorporate those into the formulated plan and required capabilities.

Once a given contingency is plotted in this manner, what emerges is a menu of options for emergency response and preparedness that specifies the various capabilities necessary to detect, deter, and, mitigate the consequences of, in this instance, an industrial chemical attack in New York City. This final package will then be formally presented to the uniformed senior decision-makers (Chief of Operations and the Chief of

Department) and then to the Fire Commissioner, so that they can make informed decisions using cost-benefit analysis as they decide which resources are necessary for the department to fulfill its missions.

8. Cross-Cutting Capabilities

When during planning the projected capabilities for meeting contingency C-2 are evaluated against what capabilities already exist for traditional contingencies and immediate threats, the department is not just planning for each separate contingency in each spectrum, but is looking for cross-cutting capabilities and efficiencies. These are integral to devising a menu of capability plans that can be used to address all of the contingencies in all of the spectrums simultaneously.

Continuing the example of an industrial chemical attack, there is a limited number of specialized hazardous materials teams and a high possibility of false alarms once the event is in full swing. The particular demands of this contingency should lead planners using a CBP strategy to make decisions about the appropriate number of Hazardous Materials support units and firefighters to train as hazardous materials specialists, to ensure their department can mount an effective C-2 response. Senior staff will be able to make the best decisions only if they have a clear understanding of the contingency itself, the capabilities a response will require, alternative measures, and the likely impact a deficit in any required capability will have on the success of the response. When they do find a weakness in the department's existing capabilities, the planning group can pass the information on to senior staff, who will then forward it for procurement to support units, such as the FDNY Bureau of Technology's Technical Oversight Committee. Ultimately, the Research and Development unit will be tasked to acquire these new capabilities for the department.

Formal FDNY plans that include clear capability requirements could also provide a means to confirm these requirements through suitable field testing and piloting. These preplanned packages of plans can then be used to devise operation circulars, training procedures, and table-top exercises for the senior uniform staff of the department, to validate options and projected requirements. Chiefs who will respond to a C-2-type incident could also call on their own experience with similar situations to overcome

problems, improve and organize plans, and identify other necessary capabilities for response. For recognized deficits, the senior staff can seek additional resources from the Bureau of Fiscal Services, based on a cost-benefit analysis.

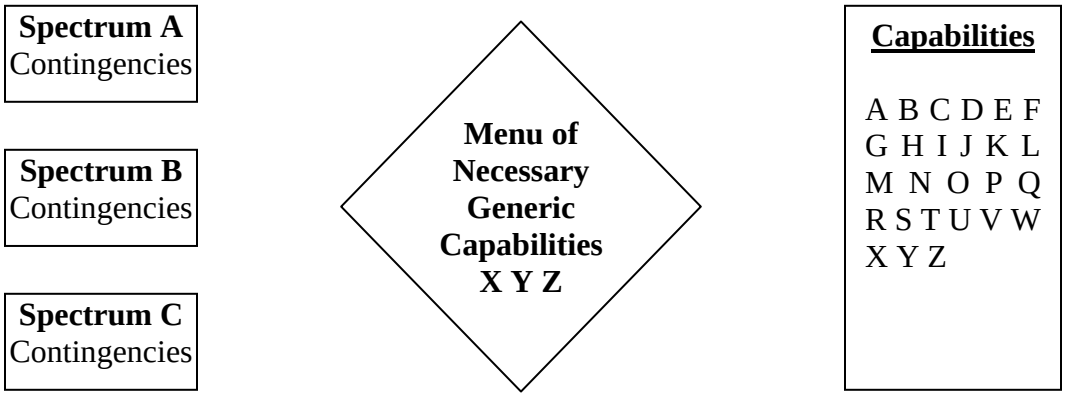

Figure 14. Menu of Contingencies and Capabilities

As Figure 14 shows, the contingency spectrums on the left give the department the whole picture of what it needs to prepare for. On the right is a list of all the capabilities that the department would need to respond to each contingency individually. These can help the department decide how it will prepare for every contingency. In the center are those generic capabilities the FDNY must have to be effective regardless of the contingency. This exercise demonstrates how a full spectrum analysis can help planners pinpoint the needed capabilities, and plan for them to be funded and developed into an optimal menu of capabilities.

8. Planning Challenges and Demands

This FDNY case study illustrates how a first responder organization might use this new planning methodology to prevail over current planning challenges and demands for the traditional and homeland security missions. In the *FDNY Strategic Plan 2004-*

2005 the department has acknowledged the need for a better planning process: "The attacks have given us a new sense of urgency to broaden our response capabilities to include terrorism preparedness."[61] Adopting this new first responder planning methodology for homeland security, which incorporates the strengths of CBP, SBP, and TBP, could provide a formal and common approach to successful emergency response planning and preparedness.

B. CASE STUDY IMPLICATIONS

As the FDNY case study demonstrates, this proposed new first responder planning methodology for homeland security can provide for a full spectrum of emergency response. The new planning process would allow the FDNY to identify capabilities necessary for consequence management and mitigation of various contingencies within the three contingency spectrum areas. Analysis and efficiency studies are performed by comparing the different spectrums of contingencies against existing capabilities. This would create a menu of capabilities necessary for the FDNY to respond to all its missions, including immediate threats and terrorism. It will serve first responder organizations well by identifying those necessary capabilities and resources to overcome the present shortfalls in preparedness and response.

This innovative planning concept for the fire service and others in the first responder community may be the most effective approach to reforming planning culture during this difficult and enduring period of change. The threat of terrorism is real, and homeland security missions will only continue to increase. First responders will be first on the scene for all contingencies and must plan to be successful for both traditional and non-traditional missions.

The homeland security case study presented here shows that this new planning methodology is comprehensive enough to bridge the gaps between traditional and homeland security missions. It offers a formal planning process for first responder organizations to use in deciding on resource allocation and necessary capabilities, and for formulating highly adaptable response plans.

---

[61] *FDNY Strategic Plan 2004-2005*, iii.

THIS PAGE INTENTIONALLY LEFT BLANK

IX. CONCLUSIONS

Strong support exists throughout the first responder community and the federal government for a better, more formal emergency preparedness planning methodology that will take into account wide spectrums of contingencies and promote more efficient and cost effective emergency response preparedness. This support is evident in the "National Preparedness" strategy (Homeland Security Presidential Directive 8), which targets local jurisdictions and the first responder community. Although we cannot easily accept or understand terrorism, predict specific threats or targets, or protect everything at risk, once on scene first responders can manage a terrorist event in an organized, safe, and professional way, controlling injuries and mitigating damage, and thus diminishing the consequences of terrorism.[62]

It is all the more important for the first responder community to implement a better planning methodology to incorporate homeland security as part of its mission. The fire service and other components of the first responder community are looking for more guidance and better ways to plan during these uncertain times, within an increasingly restrictive budgetary framework. Scenario and threat-based planning are already being used by the first responder community. However, these are inadequate to deal with the asymmetric threats and consequences of terrorism.

I have proposed the incorporation of capabilities-based planning to complement the present first responder planning methodologies. CBP will enable the fire service and the rest of the first responder community to perform much more effectively in the future than they have in the past by providing a basis for resource allocation and planning for response that offers important advantages over current, informal practices. In particular, they will be better prepared than they are today to respond not only to their traditional missions, but acts of terrorism, and homeland security threats as well. To do so well will require the first responder organizations to set priorities and make choices based on their own geographic locations and budgets. Achieving planning and decision superiority and generating tailored effects across the emergency response space allow the fire service and

[62] Gray, Colin S., "Thinking Asymmetrically in Times of Terror," Parameters, US Army War College Quarterly, Spring 2002 retrieved June 28, 2004: http://carlisle-www.army.mil/usawc/Parameters/02spring/gray.htm.

the other first responders to control any situation over a range of contingencies. This thesis proposes a new integrated planning methodology that combines the planning strengths of SBP, TBP, and CBP. The new method identifies capabilities that could be used to manage and mitigate the consequences of the different types of contingencies within the various response spectrums. It allows an organization to perform analysis and efficiency studies to evaluate the different spectrums of contingencies against existing capabilities and create a menu of capabilities necessary for the FDNY to respond to all its missions, including immediate threats and terrorism, in the most efficient and cost-effective manner. This methodology could be used by first responders to develop the better planning necessary to incorporate the homeland security mission. This thesis also examines emerging best practices used by the U.S. military that can be incorporated into the First Responders Planning Methodology for Homeland Security.

Terrorism has always existed in our world. In the past decade, our country, a true bastion of freedom and democracy, has been targeted by misanthropic extremists hiding behind a cloak of religious fervor. New York City in particular has been the focus of notorious and violent attempts by these misguided zealots. To temper this threat, the first responder community is engaged in a tremendous undertaking, to provide the same effective service as in the past.

First responders must develop plans and strategies, procure state of the art equipment, and train personnel. This is a formidable task in an era in which we must do more with less, as dollars become tighter in times of diminished budgets. It is my belief that the men and women of the first responder community will accept this challenge, overcome the planning obstacles, and continue to provide the professional service American citizens have become accustomed to, and rely on. To succeed, the fire service and other first responders must adopt a new planning methodology to integrate necessary capabilities providing for innovation to develop a menu of well-organized and planned responses that are effective and adaptable to all situations.

LIST OF REFERENCES

Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, *Fourth Annual Report to the President and Congress,* Arlington, VA: RAND, December 2002.

Air War College, "Using Scenarios for Strategic Planning" retrieved June 5, 2004 from http://www.au.af.mil/au/awc/awcgate/usda/using_scenarios.htm

Barr, Robert C. and Eversole, John M., *The Fire Chief's Handbook, Sixth Edition,* Tulsa Oklahoma, PennWell Corporation, Fire Engineering, 2003.

Bartlett Henry C., Holman, Paul Jr., and Somes, Timothy E. *The Art of Strategy and Force Planning: Alternate Approaches to Force Threat,* September 2003.

Bowman, Steve "Weapons of Mass destruction: The Terrorist Threat," CRS Report to Congress, RL31332 March 7, 2002, retrieved June 12, 2004 from http://www.fas.org/irp/crs/RL31332.pdf.

Bryson, John M., *Strategic Planning for Public and Nonprofit Organization,* Jossey-Bass Publishers, Revised Edition, 1995.

Crouch, J.D. II, "Challenges of a New Capability-based Defense Strategy: transforming US Strategic Forces" March 5, 2003, retrieved October 11, 2004 from http://www.dtic.mil/ndia/2003science/crouch.pdf.

Davis, Paul K, Gompert, David and Kugler, Richard "Adaptiveness in National Defense: The Basis of a New Framework" RAND Corporation Publication IP 155, 1996, retrieved June 16, 2004 from http://www.rand.org/publications/IP/IP155/.

Davis, Paul K., *New Challenges for Defense Planning: Rethinking How Much Is Enough.* Santa Monica, CA: RAND Corporation Publication MR-400-RC, 1994.

Davis, Paul K., *Analytic Architecture for Capabilities-Based Planning, Mission Systems Analysis, and Transformation.* Santa Monica, CA: RAND Corporation Publication MR 1513, 2002 retrieved June 28, 2004 from http://www.rand.org/publications/eb/def/6702/mr1513.html

Essex, Michael J., "Practical Planning for the Terrorist Event," Firehouse Magazine April 2002 retrieved October 2, 2004 from http://www.firehouse.com/magazine/archives/2002 /April/.

Falkenrath, Richard, Newman, Robert, and Thayer, Bradley, *America's Achilles' Heel Nuclear, Biological, and Chemical Terrorism and Covert Attack,* The MIT Press Cambridge, Massachusetts London, England, 2001.

"FBI and CIA say Al Qaeda is Biggest Threat" United Press International, Newsmax.com, February 12, 2003, retrieved June, 12, 2004 from http://www.newsmax.com/archives/articles/2003/2/11/161724.shtml.

Fire Department City of New York, *Division Circular Order #36 Revised,* September 1978.

Fire Department City of New York, *FDNY Strategic Plan 2004-2005,* January 1, 2004.

Fire Department City of New York, *Fire Tactics and Procedures, Emergency Response Plan,* August 2004.

Fire Department City of New York, *Fire Tactics and Procedures, Private Dwelling Fires,* 2002.

Fire Department City of New York, *Incident Command System Manual,* 1997.

Foxnews.com, "FBI: Al Qaeda is Still Top Threat to U.S.", February 6, 2003 retrieved June 12, 2004 from http://www.foxnews.com/story/0,2933,77711,00.html

Garamone, Jim, American Forces Press, "Rumsfeld Tells Congress Changes Needed to Increase Flexibility" February 5, 2003, received October 28, 2004 from http://www.au.af.mil/au/awc/awcgate/dod/n02052003_200302057.htm

Global Security website, *US Defense Policy,* retrieved May 24, 2004 from http://www.globalsecurity.org/military/intro/intro.htm

Gray, Colin S., "Thinking Asymmetrically in Times of Terror," Parameters, US Army War College Quarterly, Spring 2002, 2002 retrieved June 28, 2004 fromhttp://carlisle-www.army.mil/usawc/Parameters/02spring/gray.htm.

Handel, Michael, I., *Masters of War, Classical Strategic Thought, Third Edition,* Portland Oregon, Frank Cass Publishers, 2001.

Hoetmer, Gerard J., *Fire Service Today: Managing a Changing Role and Mission,* International City/County Management Association, Practical Management Series, 1996.

Kahan, Jerome H., Tindal, Zavadil, Stephen W., *The New US Strategic Framework and Capabilities-based Planning: Application to Strategic Force Planning,* June 2003 retrieved February 15, 2005 from http://www.wslfweb.org/docs/dtraasco/CBP_Paper_US-RU_Conference.pdf.

Kendall, Jeffery B., "Capabilities-Based Military Planning: The Myth," National War College Paper, During National Military Strategy Seminar. National Defense University, April 17 2002 retrieved September 16, 2004 from http://www.ndu.edu/library/n2/n025605L.pdf

Krepinevich, Andrew, "Restructuring Defense for a New Era –The Value of scenario-Based Planning" April 8, 1996, retrieved June 5, 2004 from http://www.csbaonline.org/4publications/Archive/B.19960408.Restructuring_Defe/B.19960...

Lubnau, Thomas, and Okray, Randy, *Crew Resource Management, For the Fire Service*, PennWell Corporation, Fire Engineering, 2004.

McKinsey and Company, Increasing FDNY's Preparedness, The Fire Department of the City of New York, August 19, 2002.

Military Quotes.com, "Napoleon Bonaparte Quotes" retrieved October 11, 2004 from http://www.military-quotes.com/Napoleon.htm.

National Fire Protection Agency International, Fire Protection Handbook, Nineteenth Edition, Volume II, Quincy Massachusetts, 2003.

National Fire Protection Agency Journal, The Aftermath, November/December 2001.

National Security Strategy of the United States of America, September 2002, retrieved May 19, 2004 from http://www.whitehouse.gov/ncs/nss.pdf.

National Strategy for Combating Terrorism,), February 2003.retrieved June 16, 2004 from http://www.whitehouse.gov/news/releases/2003/02counter_terrorism_strategy.pd.

National Strategy for Homeland Security, July 16, 2002, retrieved January 12, 2004 from http://www.whitehouse.gov/homeland/book/

Net MBA Business Knowledge Center Website, "Scenario Planning," retrieved May 30, 2004, from http://www.netmba.com/strategy/scenario/.

Johnson, Stuart, Libecki, Martin and Treverton, Gregory, "New Challenges, New Tools for Defense Decisionmaking" Santa Monica, CA: RAND Corporation Publication MR-1576-RC, 2003 retrieved January 15, 2005 from http://www.rand.org/publications/MR/MR1576/MR1576.intro.pdf.

Nicholson, John, "Terrorism: Impetus for Change," NFPA Journal, November/December 2001.

Norman, John, *Fire Officer's Handbook of Tactics, 2nd Edition*, PennWell Corporation 1998.

President's Homeland Security Advisory Council, *Statewide Template Initiative"*, (March 2003), retrieved September 16, 2004 from http://www.dhs.gov/interweb/assetlibrary/statewide_Template_Initiative.pdf.

Schneider, William, Honorable Chairman of the Defense Science Board, Office of the U.S. Secretary of Defense, "U.S. Defense Strategy: From Threat-Based to Capabilities-Based Planning" 2001, retrieved May 29, 2004 from http://www.csdr.org/2001Book/2001_chap29.htm.

SRI Consulting Business Intelligence, Scenario Planning" retrieved December 12, 2005 from http://www.sric-bi.com/consulting/ScenarioPlan.shtml

Technical Cooperation Program, Joint Systems Analysis Group Technical Panel 3, "Guide to Capability-based Planning" retrieved on October 10, 2004 from http://www.dtic.mil/jointvision/ideas_concepts/auscanzukus_tp3cbp.doc

Troxell, John F, "Force Planning in an Era of Uncertainty: Two MRCs as a Force Sizing Framework," U.S. Army War College, September 1997, retrieved June 5, 2004 from http://www.carlisle.army.mil/ssi/pdfiles/00306.pdf.

U.S. Department of Defense. *Quadrennial Defense Review Report*, September 30, 2001, retrieved September 16, 2004 from http://www.defenselink.mil/pubs/qdr2001.pdf.

U.S. Department of Defense, *Homeland Security Joint Operating Concept*, February 2004, received December 1, 2004 from http://www.dtic.mil/jointvision/hls_joc_v1.doc.

U.S. Department of Defense. *National Military Strategy*, May 13, 2004 retrieved January 11, 2005 from http://www.dtic.mil/jcs/core/nms.html.

U.S. Department of Homeland Security, FEMA, *Fire and Emergency Services Preparedness Guide for the Homeland Security Advisory System, First Edition*, (January 2004), retrieved on October 10, 2004 from http://www.usfa.fema.gov/downloads/pdf/hsas-guide.pdf.

U.S. Department of Homeland Security. *Homeland Security Presidential Directive 8, "National Preparedness", Implementation Status Overview, NEMA* Midyear Conference, September 2004, retrieved February 26, 2005 from http://www.nemaweb.org/?1084.

U.S. Department of Homeland Security, *National Incident Management System*, March 2004 retrieved April 29, 2004 from http://www.dhs.gov/interweb/assetlibrary/NIMS-90-web.pdf.

U.S. Department of Homeland Security, *Homeland Security Presidential Directive/HSPD-8 "National Preparedness" Implementation Concept – Draft*, April 2004.

U.S. Department of Homeland Security, *HSPD-8 "National Preparedness", Target Capabilities*, December 2004, retrieved on January 31, 2005 from http://www.scd.state.hi.us/CSSPrototype/simplelist/Target_Capabilities_Review_Guide.pdf.

U.S. Department of Homeland Security. *National Response Plan*, 2004 retrieved January 1, 2005 from http://www.dhs.gov/interweb/assetlibrary/NRP_FULLtext.pdf.

U.S. Department of Homeland Security, *Homeland Security Advisory System*, retrieved January 30, 2005 from http://www.dhs.gov/dhspublic/display?theme=29.

U.S. Department of Homeland Security, *National Strategy for Homeland Security*, July 2002, retrieved January 16, 2004 from http://www.whitehouse.gov/homeland/book/.

U.S. Department of Homeland Security's Office of State and Local Government Coordination and Preparedness (DHS/SLGCP), *Questions and Answers from Capabilities Workshop*, October 12-14, 2004, in Washington, D.C., obtained February 3, 2005 from Glen Woodbury, Associate Director Executive Education Program at NPS.

U.S. Department of Homeland Security, *Target Capabilities List: Version 1.0*, Office of State and Local Government Coordination and Preparedness, (January 31, 2005) on March 1, 2005 from http://mmrs.fema.gov/Main/Events/Target%20Capabilities%20List-Version%201.0.pdf.

United States General Accounting Office, “Combating Terrorism, Need for Comprehensive Threat and Risk Assessments of Chemical and Biological Attack,” September 1999, retrieved June 12, 2004 from http://www.gao.gov/archive/1999/ns99163.pdf.

U.S. Homeland Security Presidential Directive (HSPD) 5, *Management of Domestic Incidents*, February 28, 2003, retrieved May 19, 2004 from http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html.

U.S. Department of Homeland Security. *National Strategy for Homeland Security*, July 2002. retrieved June 16, 2004 from http://www.whitehouse.gov/homeland/book/.

United Press International, Newsmax.com, “FBI and CIA say Al Qaeda is Biggest Threat”, Feb. 12, 2003, retrieved October 2, 2004 from http://www.newsmax.com/archives/articles/2003/2/11/161724.shtml.

Wack, Pierre, *Scenarios: Unchartered Waters Ahead*, Harvard Business Review 63, no. 5 1985 retrieved June 28, 2004, from http://netmba.com/strategy/scenario/.

Wallace, Mark, *Fire Department Strategic Planning, Creating Future Excellence,* Penn Well Corporation, Fire Engineering, 1998.

Watson, Hugh J., Houdeshel, George and Rainer, Rex Kelly Jr., Building Executive Information Systems and other Decision Support Applications. Hoboken, N.J.: John Wiley & Sons, 1997.

Wilder, Steven S., *Risk Management in the Fire Service,* PennWell Corporation, Fire Engineering, 1997.

Wikipedia Encyclopedia, “2001 Anthrax Attacks,” retrieved October 10, 2004 from http://en.wikipedia.org/wiki/2001_anthrax_attack.

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
   Ft. Belvoir, Virginia

2. Dudley Knox Library
   Naval Postgraduate School
   Monterey, California

3. Paul Stockton
   Naval Postgraduate School
   Monterey, California

4. Glen Woodbury
   Naval Postgraduate School
   Monterey, California

5. Nicholas Scoppetta
   Fire Commissioner FDNY
   Brooklyn, New York

6. Frank Cruthers
   First Deputy Fire Commissioner FDNY
   Brooklyn, New York

7. Peter Hayden
   Chief of Department FDNY
   Brooklyn, New York